

Craven Thompson & Associates, Inc.

Bid Contact **Patrick Gibney**
pgibney@craventhompson.com
Ph 954-739-6400

Address **3563 NW 53 Street**
Fort Lauderdale, FL 33309

Item #	Line Item	Notes	Unit Price	Qty/Unit	Attch.	Docs
12665-1026--01-01	Water Consent Order Program Management and Mapping Services	Supplier Product Code:	First Offer -	1 / each	Y	Y

Supplier Total **\$0.00**

Craven Thompson & Associates, Inc.Item: **Water Consent Order Program Management and Mapping Services****Attachments**

CTAs SOQ for City of Fort Lauderdale RFQ 12665-1026.pdf



**Craven Thompson
& Associates, Inc.**
3563 NW 53rd Street
Fort Lauderdale, Florida 33309

PREPARED FOR

City of Fort Lauderdale



REQUEST FOR QUALIFICATIONS WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES

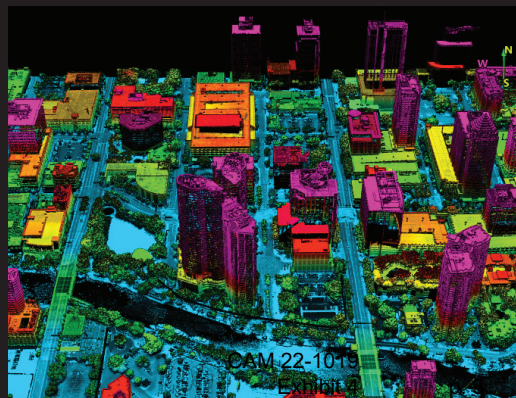
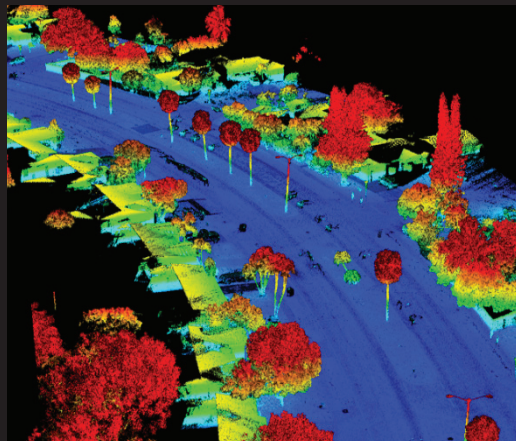
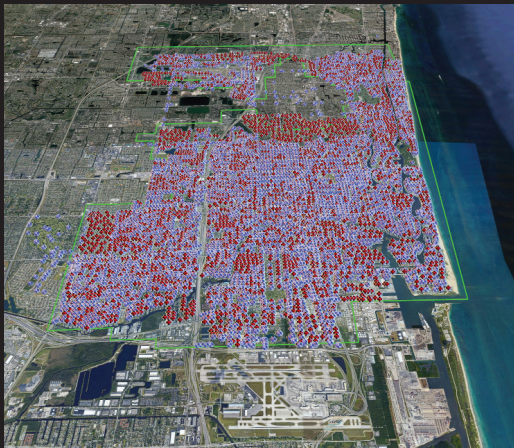
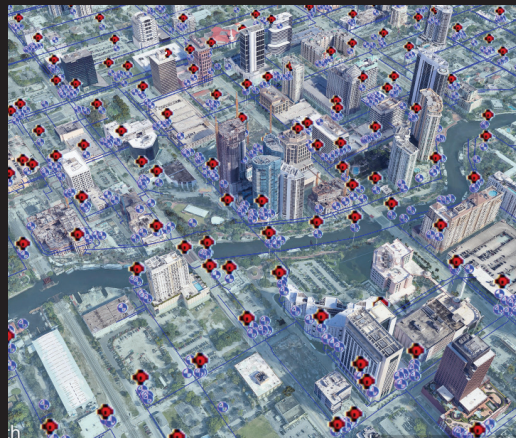
RFQ # 12665-1026

JUNE 27, 2022

IN ASSOCIATION WITH:

Hazen

WOOLPERT



LETTER OF INTEREST



June 27, 2022

Attn: Eric Martinez
Senior Procurement Specialist
City of Fort Lauderdale
Procurement Services Division
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, Florida 33301

**RE: WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES
CITY RFQ # 12665-1026**

Mr. Martinez and Selection Committee Members:

Craven Thompson and Associates, Inc. is pleased to submit this Statement of Qualifications for your consideration in response to the **City of Fort Lauderdale's** Request for Qualifications for *"Water Consent Order Program Management and Mapping Services"*.

We understand the importance of the services required under this RFQ in meeting the City's obligations in the Water Consent Order from FDEP. Due to the limited timeframe to complete and certify the mapping of the water distribution system, we do not believe that meeting the July 24, 2023 deadline stipulated in the Consent Order is achievable under normal conditions, so we have provided two different approaches to the data collection process for the City to consider. One approach will renegotiate both the mapping plan and the timeframe that would be more cost-effective for the City, and a second approach that will meet the current timeframe, utilizing high-tech software, hardware, and personnel, but carries with it a more costly outcome. No matter which approach the City decides upon, it is our intent to expedite the mapping and certification process to the greatest extent possible.

Our team's relationship with the City and with FDEP will allow us to guide the project through the process and bring about a favorable outcome to both entities. We intend to utilize innovative, high tech, and time saving solutions to the various challenges of the project to reduce the project schedule and increase the efficiency of our effort.

Our preferred approach for consideration would be to revisit the water distribution mapping plan with the City and FDEP. We believe that the actual intent of the scope in the Consent Order differs significantly from the scope identified in the WGI water distribution system mapping plan. With a modified plan, which will meet the Consent Order intent, we can significantly reduce the overall time that it will take to complete and certify the system data collection and mapping.

Considering the condensed timeframe under which these services are to be performed, we assembled a team of consultants very familiar with the City of Fort Lauderdale. Craven Thompson as prime consultant, and Hazen and Sawyer, and Woolpert as major subconsultants constitute a team currently working on the Sanitary Sewer Consent Order program management, data collection & mapping (Hazen and Sawyer, Craven Thompson) and the implementation of the Cityworks Asset Management System (Woolpert) for the City of Fort Lauderdale. Each firm is a known entity to City staff and have a proven reliability and expertise with very similar tasks. We believe that this is a great asset to the City as they will not be subject to a "learning curve" as they will with other consultant teams.

We have also included a large number of survey/data collection and S.U.E. subconsultants for the project after a careful review of the WGI Water Mapping Plan and noting the size and complexity of the City's water assets. The required staffing levels necessitated the large number of survey/data collection and S.U.E. firms necessary to meet Consent Order requirements. The following is a list of the Craven Thompson Team members and their roles:

- **Craven & Thompson (Prime)**
Project Director, Survey Project Management, GIS / Data Collection, Subcontractor Coordination / Management

LETTER OF INTEREST



- **Hazen and Sawyer (Sub-consultant)** - Contract Program Management, Oversight of Valve Exercising Program, Reports and City / FDEP Coordination & Liaison
- **Woolpert, Inc. (Sub-consultant)** - GIS Coordination & Management/Data Collection/QA-QC/City Works Integration

Companies, Subconsultants, and Data Collection Responsibilities:

Company	Task 1	Task 2	Survey Crews
Craven, Thompson	Project Manager / Survey	Project Manager / GIS / Survey / Coordination	2 Survey
Hazen and Sawyer	Program Management	Program Management	N/A
Woolpert	Survey	GIS / Mobile-Aerial Lidar/ Subsurface Utility Mapping	2 Survey / S.U.E.
Keith & Associates	Survey	Mobile Lidar/ Subsurface Utility Mapping	2 Survey / S.U.E.
Surveying and Mapping (SAM)	Survey	Mobile Lidar/ Subsurface Utility Mapping	2 Survey / S.U.E.
Manuel G. Vera	Survey	Mobile Lidar/Subsurface Utility Mapping	2 Survey / S.U.E.
Craig A. Smith	Survey	Subsurface Utility Mapping	2 Survey / S.U.E.
Ritzel-Mason	Survey	Subsurface Utility Mapping	1 Survey / S.U.E.
InfraMap	Survey	Subsurface Utility Mapping	1 Survey / S.U.E.
Zeman Consulting	Survey	Subsurface Utility Mapping	1 Survey / S.U.E.
Gibbs Land Surveying	Survey		1 Survey
Stoner & Associates	Survey		2 Survey
McLaughlin Engi.	Survey		2 Survey
MOT Plans.com	Maintenance of Traffic	Maintenance of Traffic	3 Crews
Pure Technologies, dba Wachs Water Services (Xylem)	Valve Conditioning / Exercising		

Mr. Patrick J. Gibney, P.E. of Craven Thompson will serve as Project Director for this contract. He will have overall responsibility and authority over all personnel, both Craven Thompson and subconsultants, on this project. Mr. Gibney has been involved in managing a number of City of Fort Lauderdale projects over the past ten years.

Authorized Representative/Principal-In-Charge/Project Director:

Patrick J. Gibney, P.E., Vice President, Engineering, Craven Thompson & Associates, Inc.

Phone: (954) 739-6400 / Fax: (954) 739-6409 / Email: pgibney@craventhompson.com

Mr. Khamis Al-Omari, P.E. (Hazen and Sawyer) will act as the Program Manager under this contract. Mr. Al-Omari currently serves as the Program Manager for the City of Fort Lauderdale Sewer Design and Implementation Consent Order Program. He is responsible for the program budget, schedule controls, risk management, and reporting. Mr. Richard Pryce, P.S.M. of Craven Thompson will act as the Project Manager for this task as the primary focus of this RFQ is the survey/data collection and G.I.S. Mapping of the City's water system. Mr. Pryce managed these services for the mapping services under the Sanitary Sewer Consent Order, and also managed the survey/data collection and G.I.S. mapping of the City's stormwater assets as a subconsultant to Hazen and Sawyer for the City's Stormwater Master Plan.

We sincerely appreciate the opportunity of providing this response to the City of Fort Lauderdale and hope to continue to build upon the relationship we have with the City and staff.

Sincerely,

CRAVEN THOMPSON & ASSOCIATES, INC.

PATRICK J. GIBNEY, P.E.
Vice President, Engineering

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Section 4.2.2: Executive Summary

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SECTION 4.2.2: EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

We understand the importance of the services required under this RFQ in meeting the City's obligations in the Water Consent Order from FDEP. Due to the limited timeframe to complete and certify the mapping of the water distribution system, we do not believe that meeting the July 24, 2023 deadline stipulated in the Consent Order is achievable under normal conditions so we have provided two different approaches to the data collection portion of the project for the City to consider as part of our submittal. One approach will renegotiate both the mapping plan and the timeframe that would be more cost effective for the City, and a second approach that will meet the current timeframe, utilizing high tech software, hardware, and personnel, but carries with it a more costly outcome.

We have enlisted a large number of subconsultants to provide surveying, mapping, and Level A and Level B Subsurface Utility Engineering (S.U.E.) Services as identified in the Water Distribution System Mapping Plan developed by WGI and accepted by the Florida Department of Environmental Protection (FDEP). This Craven Thompson Team along with major subconsultants, Hazen and Sawyer (Program Management), and Woolpert, Inc. (Mapping and G.I.S. integration) provides the City with the most highly qualified team with the greatest ability to deliver the project successfully. We are fully capable and willing to work with the City and FDEP to satisfy the intent of the Consent Order.

The Craven Thompson Team has worked together and separately on several successful projects for the City of Fort Lauderdale over the past ten years. The advantage of this team is that the City already knows our capabilities and the quality of our work and can rest assured that we will deliver what we commit to in the most efficient and cost-effective way possible. The Team members are very familiar with the City of Fort Lauderdale's requirements for program management, survey\GIS data collection, GIS processing, quality control, mapping, and maintaining the integrity of the GIS data due to our (Craven\Hazen) previous projects on the Sanitary and Storm Sewer systems and for Woolpert's work on the Cityworks Asset Management Software. We all take our work seriously and will be able to provide the city with a comfort level on our ability to complete and deliver what's needed for this project.

Achieving success on this project requires a team who fully understands the City's processes, distribution system, GIS, Cityworks, data models and asset management principles. This Craven Thompson Team not only meets all of those requirements, our team members have worked together on multiple projects, which will result in greater efficiency and effectiveness in working toward aggressive deadlines.

We have a clear line of sight of the required goals and objectives. In our approach, we describe our ability to partner with the City, which has been proven with our work on the Sewer Consent Program, to develop a Plan to transition active Consent Order projects without losing any of the momentum you have already built. We will continue to operate under a "right-sized" Program Management umbrella. This approach requires a large contingent of qualified surveyors, engineers, as well as project controls, GIS and Cityworks personnel who have experience successfully delivering projects in the Fort Lauderdale public works environment. Our team was specifically constructed to deliver such a talent pool to the City. This is not a project to learn on. It is a program that demands wealth of prior knowledge and experience.

Section 4.2.3: Firm Qualifications and Experience

Section 4.2.3

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



FIRM QUALIFICATIONS AND EXPERIENCE

Craven Thompson & Associates, Inc. has worked with the City of Fort Lauderdale since the creation of the firm in 1962, sixty years ago. We have provided civil engineering, surveying, project management, landscape architecture, G.I.S. mapping, and construction services on the many projects we have successfully completed for the City. Our subconsultant, Hazen and Sawyer also has extensive experience with the City of Fort Lauderdale including many projects and programs where Hazen and Sawyer and Craven Thompson have teamed together to provide our joint expertise to the City.

In 2016, Hazen and Sawyer, was awarded the Stormwater Master Plan Modeling and Design Implementation Engineering Consulting Services by the City of Fort Lauderdale. Craven Thompson, providing subconsultant services to Hazen and Sawyer under this contract, performed a surveying and stormwater inventory/data collection task that involved providing detailed information about the land surface characteristics, the hydrographic features and the stormwater infrastructure throughout the City of Fort Lauderdale. Craven Thompson had aerial photogrammetry subconsultant, Pickett & Associates that developed a high-resolution aerial LiDAR survey of the City of Fort Lauderdale. Craven Thompson prepared an extensive vertical and horizontal GPS control network to an extremely high level of accuracy for the Lidar Survey. We also verified the accuracy of the LiDAR by performing traditional survey topographic checks of various points within the survey limits, as well as acquired the drainage inverts, and other pertinent vertical information not visible to the aerial photogrammetry. This included, but was not limited to: storm manholes, catch basins, junction boxes, culverts headwalls and pipe ends. Information such as pipe diameters, pipe materials, pipe geometrics, inverts, the existence of exfiltration trench and/or pollution retardant baffles, headwall treatment and materials, seawall locations and elevations, canal cross sections, drainage pumps, retention and detention area geometrics, and swale locations were obtained.

Using this information, we prepared Digital Elevation Models (DEM) from the Lidar for use in the stormwater modeling task. We also delivered the information obtained to the City in the original (.las) format and the final surface models in Geotiff format for use in ArcGIS.

In 2017, the City of Fort Lauderdale entered into Consent Order No. 16-1487 with the Florida Department of Environmental Protection (FDEP) to improve sanitary sewer service within the City. The City hired Hazen and Sawyer to act as program manager for the projects necessary under this Consent Order. Craven Thompson, as a subconsultant to Hazen and Sawyer was tasked with developing a Sanitary Sewer Mapping Plan for approval by FDEP, developing a network of high-accuracy survey benchmarks and performing survey-grade Global Position System (GPS) calibrations throughout the City, and finally, developing a complete map of the wastewater collection and transmission system for the entire City service area.

Incorporating the survey control established for the Stormwater project, Craven Thompson created City-Wide Benchmarks (BM) including the establishment of primary and secondary vertical control benchmarks around the perimeter and throughout each of the 52 designated Data Collection Zones (established by Craven Thompson). This project also utilized the same horizontal datum and coordinate system as the stormwater data collection, in order to keep all utilities relative to the same survey control within City limits. After establishing the primary and

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



secondary vertical control benchmarks, a concrete monument with a brass disc (stamped with the Data Collection Zone designation) was set at a central location within each data collection zone. A GPS Static Survey was performed with a minimum of four (4) hours of GPS satellite observations collected at 1-second intervals and processed through the National Geodetic Survey (NGS) Opus program to provide accurate horizontal positioning.

We then developed Global Positioning System (GPS) localized calibration networks for each of the 52 Data Collection Zones. This was accomplished by using the primary vertical control benchmarks surrounding each zone and occupying them until the Dilution of Precision (DOP) in both the Position (POOP) and the Vertical (VDOP) levels is acceptable. Acceptable levels fall between levels 1 and 2 with highest precisions being closer to 1.

Craven Thompson then moved to the data collection phase of the sanitary sewer mapping. We completed the field data collection for approximately 5,917 sanitary manholes, 190 sanitary pump stations, 15 meters, and 80 miles of pressurized force mains. Craven Thompson updated the City sanitary sewer GIS geodatabase with data from accepted as-built drawings, field data collection, operation and maintenance markups, and as-built drawings. At the conclusion of the sanitary sewer mapping, we provided a written response to FDEP certifying that mapping of the existing sewer system was completed as required by the Consent Order.

Standard Form 330

See the attached Standard Form 330s for the prime and subconsultants.

ARCHITECT - ENGINEER QUALIFICATIONS**PART I - CONTRACT-SPECIFIC QUALIFICATIONS****A. CONTRACT INFORMATION**

1. TITLE AND LOCATION (City and State)

Water Consent Order Program Management and Mapping Services, Fort Lauderdale, Florida

2. PUBLIC NOTICE DATE

April 22, 2022

3. SOLICITATION OR PROJECT NUMBER

RFQ No. 12665-1026

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

Richard D. Pryce, P.S.M., Vice President, Surveying & G.I.S.

5. NAME OF FIRM

Craven Thompson & Associates, Inc.

6. TELEPHONE NUMBER

(954) 739-6400

7. FAX NUMBER

(954) 739-6409

8. E-MAIL ADDRESS

rpryce@craventhompson.com

C. PROPOSED TEAM

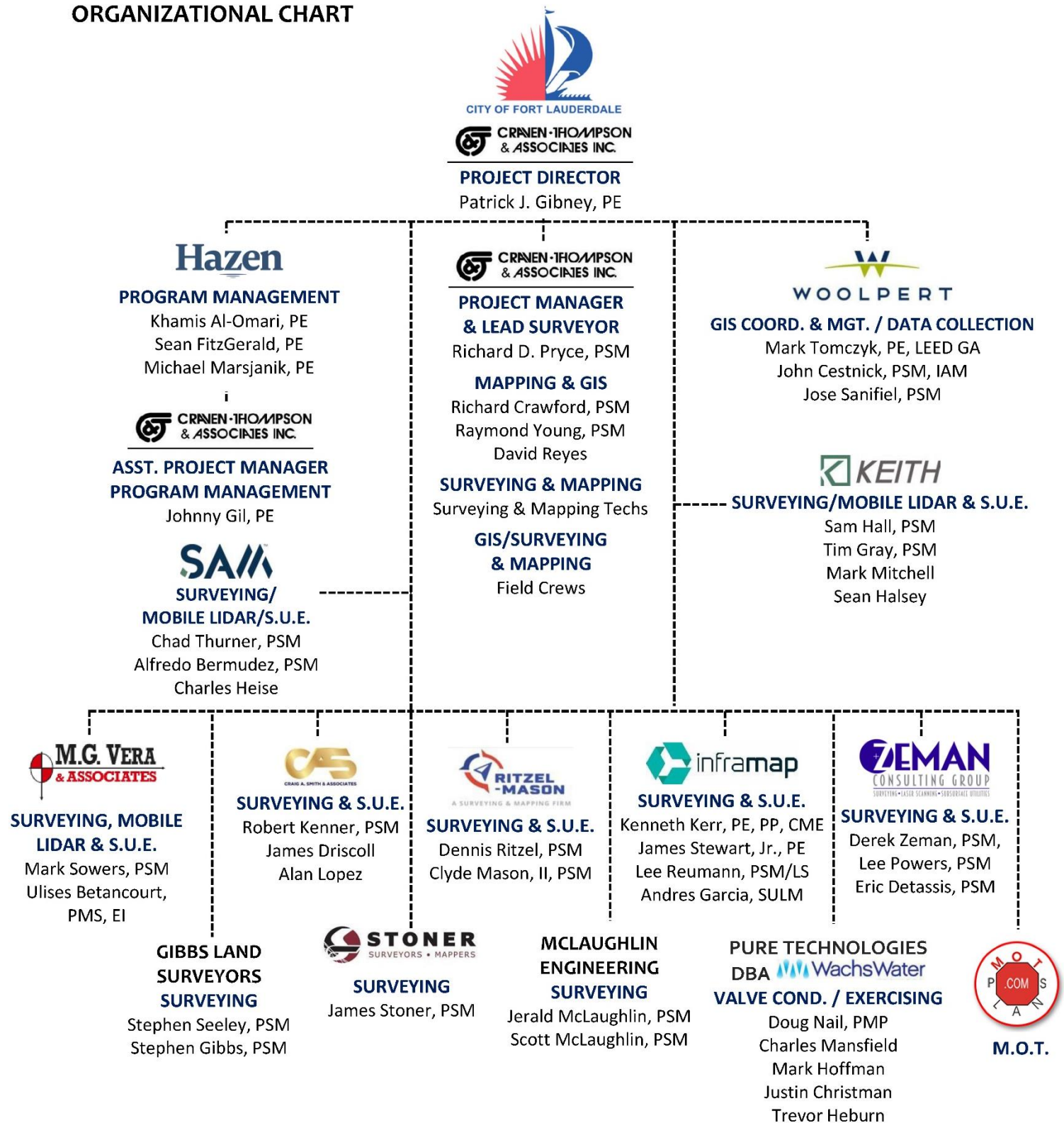
(Complete this section for the prime contractor and all key subcontractors.)

	(Check)			9. FIRM NAME ☐ CHECK IF BRANCH OFFICE	10. ADDRESS	11. ROLE IN THIS CONTRACT
	PRIME	J.V. PARTNER	SUBCONTRACTOR			
a.	X			Craven Thompson & Assoc. ☐ CHECK IF BRANCH OFFICE	3563 NW 53 rd Street Fort Lauderdale, Florida, 33309	Survey Project Management, GIS / Data Collection, Sub Coord. / Mgt.
b.			X	Hazen and Sawyer ☒ CHECK IF BRANCH OFFICE	999 Ponce de Leon Blvd., # 1150 Coral Gables, Florida 33431	Program Management
c.			X	Hazen and Sawyer ☒ CHECK IF BRANCH OFFICE	7870 E. Kemper Road, #300 Cincinnati, Ohio 45249	Program Management
d.			X	Hazen and Sawyer ☒ CHECK IF BRANCH OFFICE	One S. Street, #1150 Baltimore, MD 21202	Program Management
e.			X	Woolpert, Inc. ☒ CHECK IF BRANCH OFFICE	6100 Blue Lagoon Dr., #440 Miami, Florida 33126	GIS Coordination/ QA-QC / City Works Integration / Management
f.			X	Keith and Associates ☐ CHECK IF BRANCH OFFICE	301 East Atlantic Blvd. Pompano Beach, Florida 33060	Surveying, Mobile LiDAR, S.U.E. Services
g.			X	Surveying and Mapping (SAM) ☒ CHECK IF BRANCH OFFICE	1800 Pembroke Drive, Suite 300 Orlando, Florida 32810	Surveying, Mobile LiDAR, S.U.E. Services
h.			X	Surveying and Mapping (SAM) ☒ CHECK IF BRANCH OFFICE	2844 Pablo Avenue Tallahassee, Florida 32308	Surveying, Mobile LiDAR, S.U.E. Services
i.			X	Manuel G. Vera & Assoc. ☐ CHECK IF BRANCH OFFICE	13960 SW 47 th Street Miami, Florida 33175	Surveying, Mobile LiDAR, S.U.E. Services
j.			X	Craig A. Smith & Associates ☐ CHECK IF BRANCH OFFICE	21045 Commercial Trail Boca Raton, Florida 33486	Surveying & S.U.E. Services
k.			X	Ritzel-Mason ☐ CHECK IF BRANCH OFFICE	5119 Beachwood Road Delray Beach, Florida 33484	Surveying & S.U.E. Services
l.			X	InfraMap Corp. ☒ CHECK IF BRANCH OFFICE	1100 N. Florida Mango Road, #D West Palm Beach, Florida 33409	Surveying & S.U.E. Services
m.			X	Zeman Consulting Group ☐ CHECK IF BRANCH OFFICE	3970 RCA Blvd., Suite 7750 Palm Beach Gardens, FL 33410	Surveying & S.U.E. Services
n.			X	Gibbs Land Surveyors ☐ CHECK IF BRANCH OFFICE	2131 Hollywood Blvd., #204 Hollywood, Florida 33020	Surveying Services
o.			X	Stoner & Associates ☐ CHECK IF BRANCH OFFICE	4341 SW 62 nd Avenue Davie, Florida 33314	Surveying Services
p.			X	McLaughlin Engineering ☐ CHECK IF BRANCH OFFICE	1700 NW 64 th Street, Suite 400 Fort Lauderdale, Florida 33309	Surveying Services
q.			X	MOTPlans.Com ☐ CHECK IF BRANCH OFFICE	631 NE 45 th Street Oakland Park, Florida	Maintenance of Traffic
r.			X	WachsWater (a Xylem brand) ☐ CHECK IF BRANCH OFFICE	8920 State Route 108, Suite D Columbia, MD 21045	Valve Conditioning / Exercising

D. ORGANIZATIONAL CHART OF PROPOSED TEAM☒ (Attached)

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

ORGANIZATIONAL CHART



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME Patrick J. Gibney, P.E.	13. ROLE IN THIS CONTRACT Project Director	14. YEARS EXPERIENCE <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">a. TOTAL</td> <td style="width: 50%; border: none;">b. WITH CURRENT FIRM</td> </tr> <tr> <td style="text-align: center; border: none;">35</td> <td style="text-align: center; border: none;">29</td> </tr> </table>		a. TOTAL	b. WITH CURRENT FIRM	35	29
a. TOTAL	b. WITH CURRENT FIRM						
35	29						
15. FIRM NAME AND LOCATION (City and State) Craven Thompson & Associates, Inc., 3563 NW 53 rd Street, Fort Lauderdale, Florida 33309							
16. EDUCATION (DEGREE AND SPECIALIZATION) Rutgers, The State University, Bachelor of Science, Civil Engineering (1987)		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer - Florida No. 49428 (1995)					
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) American Society of Civil Engineers, FDOT Pre-Qualified Roadway Construction Engineering Inspection							

19. RELEVANT PROJECTS							
a.	(1) TITLE AND LOCATION (City and State) Eastside Master Infrastructure Project – Phases 2 & 3 Davie, Florida	(2) YEAR COMPLETED <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">PROFESSIONAL SERVICES</td> <td style="width: 50%; border: none;">CONSTRUCTION (If applicable)</td> </tr> <tr> <td style="text-align: center; border: none;">2015</td> <td style="text-align: center; border: none;">2018</td> </tr> </table>		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	2015	2018
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)					
	2015	2018					
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Mr. Gibney managed the project which included: 5,075 linear feet of 8" watermain, 5,140 linear feet of 12" watermain, 11,455 linear feet of 8" sanitary gravity sewer, 2,945 linear feet of 16" sanitary forcemain, 18,940 linear feet of storm sewer, 41,000 square yards of swale regrading, and over 20,000 SY of roadway reconstruction.							
b.	(1) TITLE AND LOCATION (City and State) Installation of New Redundant Bypass Line (Zone 4B & 4C) – 54" FM, Fort Lauderdale, Florida	(2) YEAR COMPLETED <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">PROFESSIONAL SERVICES</td> <td style="width: 50%; border: none;">CONSTRUCTION (If applicable)</td> </tr> <tr> <td style="text-align: center; border: none;">2020</td> <td style="text-align: center; border: none;">2021</td> </tr> </table>		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	2020	2021
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)					
	2020	2021					
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project Director - The project involved the installation of 54" nominal OD HDPE Force Main by Horizontal Directional Drill (HDD), with sections of open cut trench installation of 16" HDPE Force Main. The total length of Horizontal Directional Drill (HDD) 54" OD HDPE Force Main is 3,223 Linear Feet in length which was proposed to minimize the disturbance to the community and limit the amount of pavement restoration, with an additional 653 Linear Feet of 16" HDPE Force Main installed by open cut trench.							
c.	(1) TITLE AND LOCATION (City and State) Las Olas Watermain and Forcemain Design Criteria Package Fort Lauderdale, Florida	(2) YEAR COMPLETED <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">PROFESSIONAL SERVICES</td> <td style="width: 50%; border: none;">CONSTRUCTION (If applicable)</td> </tr> <tr> <td style="text-align: center; border: none;">2015</td> <td style="text-align: center; border: none;">2016</td> </tr> </table>		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	2015	2016
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)					
	2015	2016					
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm The purpose of this \$3.1 Million project, completed in December 2016, was to deepen a critical 20-inch water main crossing of the ICW along with adding a new 16-inch sewage force main to enhance system reliability.							
d.	(1) TITLE AND LOCATION (City and State) Pump Station A-13 & Sewer Redirection East of Federal Highway Fort Lauderdale, Florida	(2) YEAR COMPLETED <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">PROFESSIONAL SERVICES</td> <td style="width: 50%; border: none;">CONSTRUCTION (If applicable)</td> </tr> <tr> <td style="text-align: center; border: none;">2015</td> <td style="text-align: center; border: none;">2019</td> </tr> </table>		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	2015	2019
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)					
	2015	2019					
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm This project was for the construction of Lift Station A-13, located at the southeast corner of Southeast 2 nd Court and Southeast 8 th Avenue. The project scope included the construction of an 18-inch diameter gravity sanitary sewer system and the connection to an existing active sanitary sewer manhole located at the intersection of Federal Highway and Broward Boulevard to the new lift station.							
e.	(1) TITLE AND LOCATION (City and State) South Middle River Force Main Crossing – 16" Redundant Pipe Fort Lauderdale, Florida	(2) YEAR COMPLETED <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">PROFESSIONAL SERVICES</td> <td style="width: 50%; border: none;">CONSTRUCTION (If applicable)</td> </tr> <tr> <td style="text-align: center; border: none;">2020 - 2021</td> <td style="text-align: center; border: none;">2020 -2021</td> </tr> </table>		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	2020 - 2021	2020 -2021
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)					
	2020 - 2021	2020 -2021					
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project Director - The project involved the installation of 16" nominal OD HDPE Force Main under the South Middle River Waterway, with sections of open cut trench installation of 16" PVC Force Main. The total length of subaqueous crossing of 16" HDPE Force Main is 1092 Linear Feet (LF) in length, with an additional 832 Linear Feet (LF) of 16" PVC Force Main installed by open cut trench.							



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME Richard D. Pryce, P.S.M.	13. ROLE IN THIS CONTRACT Project Manager GIS, Surveying, Data Collection & Mapping	14. YEARS EXPERIENCE <table border="1"> <tr> <td>TOTAL</td> <td>b. WITH CURRENT FIRM</td> </tr> <tr> <td align="center">49</td> <td align="center">16</td> </tr> </table>		TOTAL	b. WITH CURRENT FIRM	49	16
TOTAL	b. WITH CURRENT FIRM						
49	16						
15. FIRM NAME AND LOCATION (City and State) Craven Thompson & Associates, Inc., 3563 NW 53 rd Street, Fort Lauderdale, Florida 33309							
16. EDUCATION (DEGREE AND SPECIALIZATION) Certificate in advanced GIS & Remote Sensing, BCC (2002) Advanced ESRI ARCINFO & ARCIMS Training (ESRI,) 2004		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Surveyor and Mapper Florida No. 4038 (1983)					
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) - Chairman FSMS GIS Committee - State & County Chapters, Florida Surveying & Mapping Society							

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
Fort Lauderdale Sanitary Sewer Mapping - GIS and Surveying Fort Lauderdale, Florida	PROFESSIONAL SERVICES 2018 - 2019	CONSTRUCTION (If applicable) Not Applicable
a. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Principal Survey /GIS Manager. Responsible for establishing Primary and Secondary Vertical Control with over 3000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory 5,917 Sanitary Manholes, 190 pump Stations, 15 meters, and 80 miles of force mains and their associated valves.		
Fort Lauderdale Stormwater Master Plan - GIS and Surveying Fort Lauderdale, Florida	PROFESSIONAL SERVICES 2016 - 2017	CONSTRUCTION (If applicable) Not Applicable
b. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Principal Survey Manager. Responsible for LiDAR of the City, As-built/Inventory 5,400 Stormwater Features for GIS Model. Collected and evaluated 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research As-built records of the city in the Stormwater system and provide the data in ArcGIS Geodatabase.		
Seminole Tribe of Florida Stormwater Data Collection/GIS Hollywood, Florida	PROFESSIONAL SERVICES 2020-2021	CONSTRUCTION (If applicable) Not Applicable
c. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Survey Project Manager - Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, and structure condition were obtained in the field.		
City of North Miami Beach Water & Sewer GIS North Miami Beach, Florida	PROFESSIONAL SERVICES 2014 - 2016	CONSTRUCTION (If applicable) Not Applicable
d. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm The purpose of the 25,600-Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format.		
Stormwater GIS/Data Collection Project North Miami Beach, Florida	PROFESSIONAL SERVICES 2017 - 2018	CONSTRUCTION (If applicable) Not Applicable
e. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm The City is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The Craven Thompson data was collected by a Unique ID. We provided the City with a copy of the updated geodatabase with all the proposed data fields to be collected for review. The GIS data collected consisted of: Structure type (junction, inlet, control structure, drainage well): Pipes, Culvert and Outfalls, and Headwalls and Seawalls.		



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME Richard G. Crawford, Jr., P.S.M.	13. ROLE IN THIS CONTRACT GIS, Surveying, Data Collection & Mapping	14. YEARS EXPERIENCE TOTAL 37 b. WITH CURRENT FIRM 1	
15. FIRM NAME AND LOCATION (City and State) Craven Thompson & Associates, Inc., 3563 NW 53 rd Street, Fort Lauderdale, Florida 33309			
16. EDUCATION (DEGREE AND SPECIALIZATION) Associates of Science in Land Surveying (1994) Associates of Arts in Architecture (1986)		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Surveyor and Mapper Florida No. LS5371 (1994)	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Florida Surveying & Mapping Society - Broward Chapter			

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State) Sanitary Sewer Mapping - Control Surveying Fort Lauderdale, Florida	(2) YEAR COMPLETED PROFESSIONAL SERVICES 2019 CONSTRUCTION (If applicable) Not Applicable	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☐ Check if project performed with current firm a. Survey Project Manager - Responsible for establishing Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory 5,917 Sanitary Manholes, 190 pump Stations, 15 meters, and 80 miles of force mains and their associated valves. (Mr. Crawford worked on this project while employed by another company, as a subconsultant to Craven Thompson).		
(1) TITLE AND LOCATION (City and State) Citywide Benchmarks Pompano Beach, Florida	(2) YEAR COMPLETED PROFESSIONAL SERVICES 2014 - 2015 CONSTRUCTION (If applicable) Not Applicable	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☐ Check if project performed with current firm b. Survey Project Manager - Responsible for establishing Primary and Secondary Vertical First Order Control to establish new city benchmarks to support a Storm Drainage Study.		
(1) TITLE AND LOCATION (City and State) Modeling and Design Implementation of Stormwater Master Plan Fort Lauderdale, Florida	(2) YEAR COMPLETED PROFESSIONAL SERVICES 2014 - 2015 CONSTRUCTION (If applicable) Not Applicable	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☐ Check if project performed with current firm c. Project Surveyor - Responsible for directing survey data collection, GIS analysis, and assisting others team members. Provided oversight for field data acquisition of storm water infrastructure attributes needed to populate an existing GIS Database. (Mr. Crawford worked on this project while employed by another company, as a subconsultant to Craven Thompson).		
(1) TITLE AND LOCATION (City and State) FDOT, District 4 and District 6 Districtwide Miscellaneous Services Contract, South Florida	(2) YEAR COMPLETED PROFESSIONAL SERVICES 1993 - 2005 CONSTRUCTION (If applicable) Not Applicable	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☐ Check if project performed with current firm d. Project Surveyor - Supervised a wide variety of land surveying assignments throughout Southeast Florida region as a Project Surveyor in responsible charge. Utilized GNSS, and conventional land surveying techniques to perform digital terrain modeling, subsurface utility locations (SUE), boundary determinations, sewage infrastructure analysis, bridge details, control surveys, and right-of-way establishment.		
(1) TITLE AND LOCATION (City and State) Broward County UAZ 110 / 111 & 113 Water Sewer Improvements 113B, Lauderhill, Florida	(2) YEAR COMPLETED PROFESSIONAL SERVICES 2018 - 2019 CONSTRUCTION (If applicable) Not Applicable	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☐ Check if project performed with current firm e. Project Surveyor/Field Coordinator - Mapping, Field Coordination, Survey Data Processing. Responsible for establishing Primary and Secondary Vertical Control for Drone Mapping including flying, and processing drone data.		



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME Raymond Young, P.S.M.	13. ROLE IN THIS CONTRACT GIS, Surveying, Data Collection & Mapping	14. YEARS EXPERIENCE TOTAL 41 b. WITH CURRENT FIRM 29	
15. FIRM NAME AND LOCATION (City and State) Craven Thompson & Associates, Inc., 3563 NW 53 rd Street, Fort Lauderdale, Florida 33309			
16. EDUCATION (DEGREE AND SPECIALIZATION)		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Surveyor and Mapper Florida No. 5799	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Florida Society of Professional Surveyors and Mappers			

19. RELEVANT PROJECTS

a. (1) TITLE AND LOCATION (City and State) Fort Lauderdale Sanitary Sewer System GIS & Surveying Fort Lauderdale, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2018 - 2019	CONSTRUCTION (If applicable) Not Applicable
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Craven Thompson established Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory of Manholes, Pump Stations, meters, valves, air valves and 80 miles of force mains.		
b. (1) TITLE AND LOCATION (City and State) Nova Southeastern University – Parking Garage Construction Layout Davie, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2018 - 2019	CONSTRUCTION (If applicable) Not Applicable
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Surveyor. Craven Thompson calculated the position of, and field staked seventy-seven (77) pilings for the parking garage at NSU. We placed a 60d nail or 5/8" iron rod at the center of each piling.		
c. (1) TITLE AND LOCATION (City and State) Hydrographic and Storm Water Infrastructure Survey Greenacres, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2014	CONSTRUCTION (If applicable) Not Applicable
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project Manager. Along with our sub-consultant, Craven Thompson created a survey from high-resolution, low-level LiDAR and ground surveying. The survey included roadways and canal cross-sections for proposed Drainage Improvements. Also, included Right-of-way surveys, storm drains, canals and ditches along 1 st Street in the Original Section area of the City of Greenacres and a portion of Lake Worth Canal E-3 (cross sectioned).		
d. (1) TITLE AND LOCATION (City and State) City of North Miami Beach Water & Sewer GIS North Miami Beach, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2014 - 2016	CONSTRUCTION (If applicable) Not Applicable
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project surveyor/GIS. Data Collection and G.I.S. Specialist - The purpose of the 25,600 Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format.		
e. (1) TITLE AND LOCATION (City and State) Seminole Tribe of Florida Stormwater Data Collection/GIS Hollywood, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2020 - 2021	CONSTRUCTION (If applicable) Not Applicable
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project surveyor/GIS - Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, and structure condition were obtained in the field.		



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME David Reyes	13. ROLE IN THIS CONTRACT G.I.S., Surveying, Data Collection & Mapping	14. YEARS EXPERIENCE <table border="1"> <tr> <td>TOTAL</td> <td>b. WITH CURRENT FIRM</td> </tr> <tr> <td align="center">28</td> <td align="center">8</td> </tr> </table>		TOTAL	b. WITH CURRENT FIRM	28	8
TOTAL	b. WITH CURRENT FIRM						
28	8						
15. FIRM NAME AND LOCATION (City and State) Craven Thompson & Associates, Inc., 3563 NW 53rd Street, Fort Lauderdale, Florida 33309							
16. EDUCATION (DEGREE AND SPECIALIZATION) Multiple Continuing Education programs in Surveying, GIS, and Mapping technologies.		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Certified Survey Technician Level III, FL, 2003 FDOT Maintenance of Traffic, FL					
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)							

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State) Fort Lauderdale Sanitary Sewer System GIS & Surveying Fort Lauderdale, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2018 - 2019	CONSTRUCTION (If applicable) Not Applicable
a. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Craven Thompson established Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory of Manholes, Pump Stations, meters, valves, air valves and 80 miles of force mains.		
(1) TITLE AND LOCATION (City and State) Seminole Tribe of Florida Stormwater Data Collection/GIS Hollywood, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2020 - 2021	CONSTRUCTION (If applicable) Not Applicable
b. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Data Collection and G.I.S. Specialist - Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, and structure condition were obtained in the field.		
(2) TITLE AND LOCATION (City and State) Fort Lauderdale Storm Water Master Plan - GIS & Surveying Fort Lauderdale, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2016 - 2017	CONSTRUCTION (If applicable) Not Applicable
c. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Data Collection and G.I.S. Specialist - Responsible for LiDAR of the City, As-built/Inventory 5,400 Stormwater Features for GIS Model. Collected and evaluated 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research As-built records of the city in the Stormwater system and provide the data to the City in ArcGIS Geodatabase.		
(1) TITLE AND LOCATION (City and State) Stormwater GIS/Data Collection Project North Miami Beach, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2017 - 2018	CONSTRUCTION (If applicable) Not Applicable
d. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Data Collection and G.I.S. Specialist - The City is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The Craven Thompson data was collected by a Unique ID. We provided the City with a copy of the updated geodatabase with all the proposed data fields to be collected for review.		
(1) TITLE AND LOCATION (City and State) City of North Miami Beach Water & Sewer GIS North Miami Beach, Florida	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2014 - 2016	CONSTRUCTION (If applicable) Not Applicable
e. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Data Collection and G.I.S. Specialist - The purpose of the 25,600 Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format.		



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME Johnny Gil, P.E.	13. ROLE IN THIS CONTRACT Assistant Program Manager	14. YEARS EXPERIENCE	
		TOTAL 12	b. WITH CURRENT FIRM 7

15. FIRM NAME AND LOCATION (City and State)
Craven Thompson & Associates, Inc., 3563 NW 53rd Street, Fort Lauderdale, Florida 33309

16. EDUCATION (DEGREE AND SPECIALIZATION) Masters of Science, Civil Engineering - Structures (2010) Bachelor of Science, Civil Engineering (2008)	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Civil Engineering, State of Florida No. 78613 (2015)
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
Technical Skills: AutoCAD Civil 3D, Microstation, GTSTRUDL, STAAD, ETABS, MathCAD, Matlab, Primavera, Project Planner, Microsoft PowerPoint, Advanced Excel Programming, Word, ICPR3, Cascade

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
City of Fort Lauderdale Wastewater Consent Order Program (OGC No 16-1487) – Program Management Services, Fort Lauderdale	PROFESSIONAL SERVICES 2019	CONSTRUCTION (If applicable) Present
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm a. Responsibilities include periodically gathering project status information, producing monthly progress reports, and Semi-Annual Reports, maintaining and consistently updating the overall Consent Order Program Master Schedule, recording and archiving of project completion and certification documentation, coordinating presentation graphics, assembling program status updates, drafting project notifications for project completions and Milestone achievements to the Florida Department of Environmental Protection (FDEP).		
Project Delivery Plan - Bid Package 10 Oakland Park, Florida	PROFESSIONAL SERVICES 2012 -2014	CONSTRUCTION (If applicable) 2012-2014
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm b. Responsible for the layout, replacement and upgrade design of approximately 10,000 LF of water main and 2,000 LF of force main throughout the City of Oakland Park. Design required coordination with existing utilities and permitting with City, County and State Agencies.		
City of Miami Gardens, Vista Verde Drainage Design Miami Gardens, Florida	PROFESSIONAL SERVICES 2013-2014	CONSTRUCTION (If applicable) 2015
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm c. Responsible for creating a drainage model of the Vista Verde Neighborhood and preparing a complete set of drainage plans and cost estimate. Design included pipe sizing, grading and coordination with concurrent Dade County water main installation.		
Floranada Road Roundabout and Traffic Calming Improvements City of Oakland Park, Florida	PROFESSIONAL SERVICES 2013 - 2014	CONSTRUCTION (If applicable) 2015
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm d. Project Engineer - Assisted project manager in preparation of contract documents, including revisions to plans and quantity take-offs.		
NE 38 th Street Complete Streets Project Oakland Park, florida	PROFESSIONAL SERVICES 2011	CONSTRUCTION (If applicable) 2015
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm e. Assisted project manager coordination for Complete Street LAP funded improvements through FDOT. Prepared preliminary roadway design plans, including quantity take-offs.		



F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT (Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)		20. EXAMPLE PROJECT KEY NUMBER 1
21. TITLE AND LOCATION (CITY AND STATE) Fort Lauderdale Sanitary Sewer System GIS & Surveying Fort Lauderdale, Florida	22. YEAR COMPLETED PROFESSIONAL SERVICES 2018-2019 (Data Collection)	CONSTRUCTION (If applicable) Not Applicable

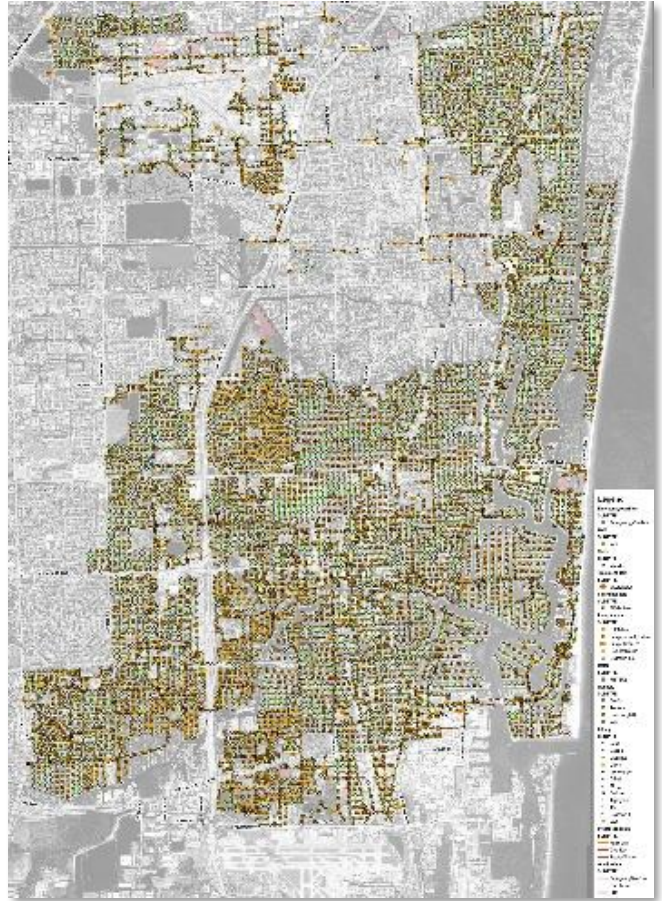
23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of Fort Lauderdale (Owner) Hazen & Sawyer (Client)	b. POINT OF CONTACT NAME Mr. Jorge Holguin, Sr. Project Mgr. Ms. Patricia Carney, V.P.	c. POINT OF CONTACT TELEPHONE NUMBER (954) 828-5675 / jholguin@fortlauderdale.gov (954) 987-0066 / pcarney@hazenandsawyer.com

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Craven Thompson established Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory of Manholes, pump Stations, meters, valves, air valves and 80 miles of force mains. During Sewer Mapping Phase I, the Benchmarks and GPS Control monuments were established for each of the 52 Data Collection Zones (DCZ). The benchmarks and monuments were utilized with a GPS base station during the feature data acquisition phase. Phase II included multiple feature data acquisitions for the City's GIS System and for certain areas to be thoroughly modeled. The data acquisition features collected as part of this Phase included 5908 manholes, 190 Pump Stations, 15 Meters, and 80 miles of pressure pipes with 752 valves and 285 Air release valves.

The initial work on this phase focused on the 5,908 manholes identified under Phase I. These features required the most of the field work and acquisition time. The manholes were divided into two categories, those that needed to be modeled completely, including 1,163 manholes which needed complete horizontal and vertical as-built information inside and out, and another 4,745 manholes which need only a minimum of horizontal and vertical information, being the rim and the inside bottom of structure.

Craven Thompson collected and updated manhole GIS geodatabase. We utilized the Trimble Terraflex program to extract the database fields from the GIS manhole feature class inside of an electronic data collector (Samsung or Ipad) for collecting the structure and pipe information inside of each manhole, pump stations and valve vaults.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Craven Thompson & Associates, Inc.	(2) FIRM LOCATION (City and State) 3563 NW 53 rd Street Fort Lauderdale, Florida 33309	(3) Role Sub-consultant – G.I.S./Surveying & Mapping
b.	(1) FIRM NAME Hazen & Sawyer	(2) FIRM LOCATION (City and State) 4000 Hollywood Blvd., Suite 750-N Hollywood, Florida 33021	(3) Role Prime - Program Manager for Consent Order
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role

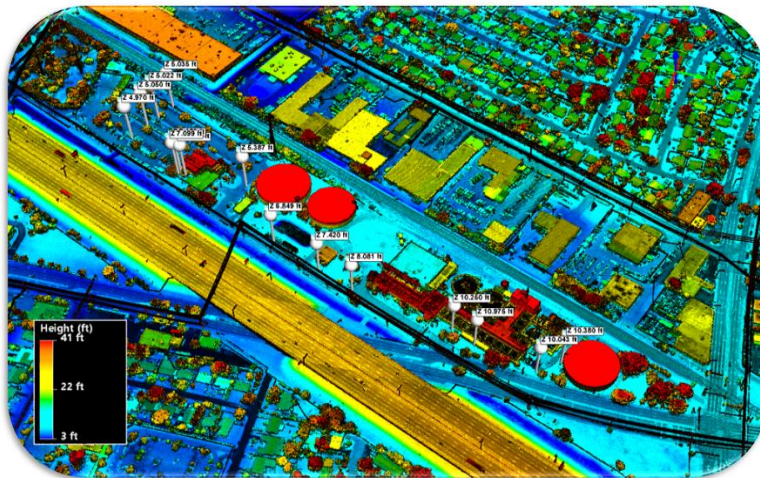


F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>		20. EXAMPLE PROJECT KEY NUMBER 2
21. TITLE AND LOCATION (CITY AND STATE) Fort Lauderdale Storm Water Master Plan - GIS & Surveying Fort Lauderdale, Florida		22. YEAR COMPLETED PROFESSIONAL SERVICES 2016 - 2017 (Data Collection) CONSTRUCTION (If applicable) Not Applicable
23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of Fort Lauderdale (Owner) Hazen & Sawyer (Client)	b. POINT OF CONTACT NAME Mr. Rares Petrica, PE, Sr. Project Mgr. Ms. Patricia Carney, V.P.	c. POINT OF CONTACT TELEPHONE NUMBER (954) 828-6720 / Rpetrica@fortlauderdale.gov (954) 987-0066 / pcarney@hazenandsawyer.com
24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT <i>(Include scope, size, and cost)</i>		

Craven Thompson performed surveying, and an As-built/Inventory 5,400 Stormwater Features for GIS City-Wide Stormwater Model. The survey limits of this project are described as the entire City limits of Fort Lauderdale. The City was flown with high density aerial LiDAR to a vertical accuracy of 0.15 feet across the entire City. From the Lidar we created a 2-foot grid Digital Elevation Model of the ground for modeling drainage flow. This required a GPS Control Network, and 309 ground control for the flight, performed over 5,000 verification shots on hard surfaces at major roadways across the city. The second part of this survey was to collect and evaluate 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research As-built records of the City in the Stormwater system and provide the data to the City in ArcGIS Geodatabase conforming to their GIS Model Schema.

Fort Lauderdale – Stormwater Master Plan

Five Ash Water Treatment Plant



➤ Random QA/QC Surveys

- Lidar Elevations
- Survey Elevations

Survey to Lidar differences			
	Δ X	Δ Y	Δ Z
	0.37	-0.27	0.05
	0.20	-0.14	0.06
	0.39	-0.02	0.03
	0.26	0.02	0.06
	0.14	0.09	0.08
	0.02	0.00	0.16
	0.25	-0.02	-0.05
	1.50	-2.75	0.00
	0.33	-0.03	0.13
	0.04	-0.14	0.03
	0.24	-0.22	0.13
	0.10	-0.41	0.13
	0.11	-0.17	0.17
	-0.09	-0.01	0.13
	0.00	-0.08	0.09
MEAN :	0.26	-0.28	0.08

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Craven Thompson & Associates, Inc.	(2) FIRM LOCATION (City and State) 3563 NW 53 rd Street Fort Lauderdale, Florida 33309	(3) Role Sub-consultant – G.I.S./Surveying & Mapping
b.	(1) FIRM NAME Hazen & Sawyer	(2) FIRM LOCATION (City and State) 4000 Hollywood Blvd., Suite 750-N Hollywood, Florida 33021	(3) Role Prime - Stormwater Master Plan Development
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
d.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role



F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>		20. EXAMPLE PROJECT KEY NUMBER 3
21. TITLE AND LOCATION (CITY AND STATE) Stormwater GIS/Data Collection Project North Miami Beach, Florida		22. YEAR COMPLETED PROFESSIONAL SERVICES 2017 - 2018 (Data Collection)
23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of North Miami Beach	b. POINT OF CONTACT NAME Mr. D. Chidi Tobias Civil Engineer	c. POINT OF CONTACT TELEPHONE NUMBER Phone: (305) 947-7581 ext. 2313 Email: Chidi.Tobias@citynmb.com

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

The City is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The Craven Thompson data was collected by a Unique ID. Craven Thompson provided the City with a copy of the updated geodatabase with all the proposed data fields to be collected for review. The GIS data collected consists of: Structure type (junction, inlet, control structure, drainage well): Pipes, Culvert and Outfalls, and Headwalls and Seawalls.


25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Craven Thompson & Associates, Inc.	(2) FIRM LOCATION (City and State) 3563 NW 53 rd Street Fort Lauderdale, Florida 33309	(3) Role Prime – G.I.S/Surveying & Mapping
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
d.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role



F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

4

21. TITLE AND LOCATION (CITY AND STATE)

North Miami Beach Water & Sewer Service Area GIS & Mapping
 North Miami Beach, Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2014 - 2016

CONSTRUCTION (If applicable)

Not Applicable

a. PROJECT OWNER

NMB Water / Jacobs

b. POINT OF CONTACT NAME

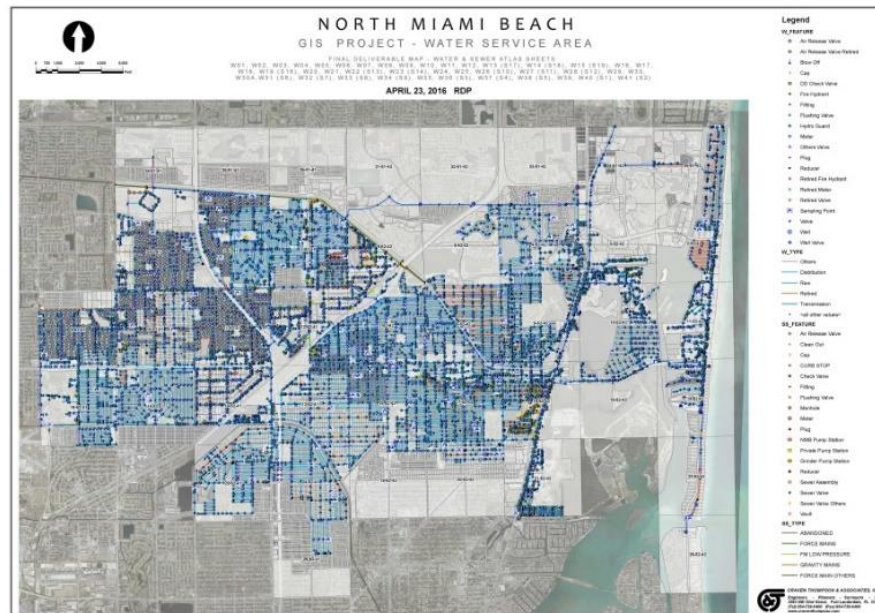
Mr. Karim Rossy
 Development Engineer 3

c. POINT OF CONTACT TELEPHONE NUMBER

Phone: (305) 948-2980, Ext. 7962
 Email: karim.rossy@jacobs.com

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

The purpose of the 25,600-Acre Service Area Project was to provide the City with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format. The Project included the entire North Miami Beach Utility service area. The process included conversion of existing AutoCAD files, into the same coordinate system as the GIS, so that future updates will be more easily transferred between the two systems, for updates and maintenance. The project involved setting up a GIS Network file structure for the City to insert existing and future documentation into, as well as, adding GIS database information in the future.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Craven Thompson & Associates, Inc.	(2) FIRM LOCATION (City and State) 3563 NW 53 rd Street Fort Lauderdale, Florida 33309	(3) Role Prime – G.I.S./Surveying & Mapping
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
d.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role



F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

5

21. TITLE AND LOCATION (CITY AND STATE)

Hollywood Seminole Reservation Stormwater Data Collection/GIS, Hollywood, Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES
 2020 - 2021
 (Data Collection)

CONSTRUCTION (If applicable)
 Not Applicable

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Seminole Tribe of Florida

b. POINT OF CONTACT NAME

Mr. Ranthus Fouch, P.E.
 Sr. Civil Engineer

c. POINT OF CONTACT TELEPHONE NUMBER

Phone: (954) 203-1034

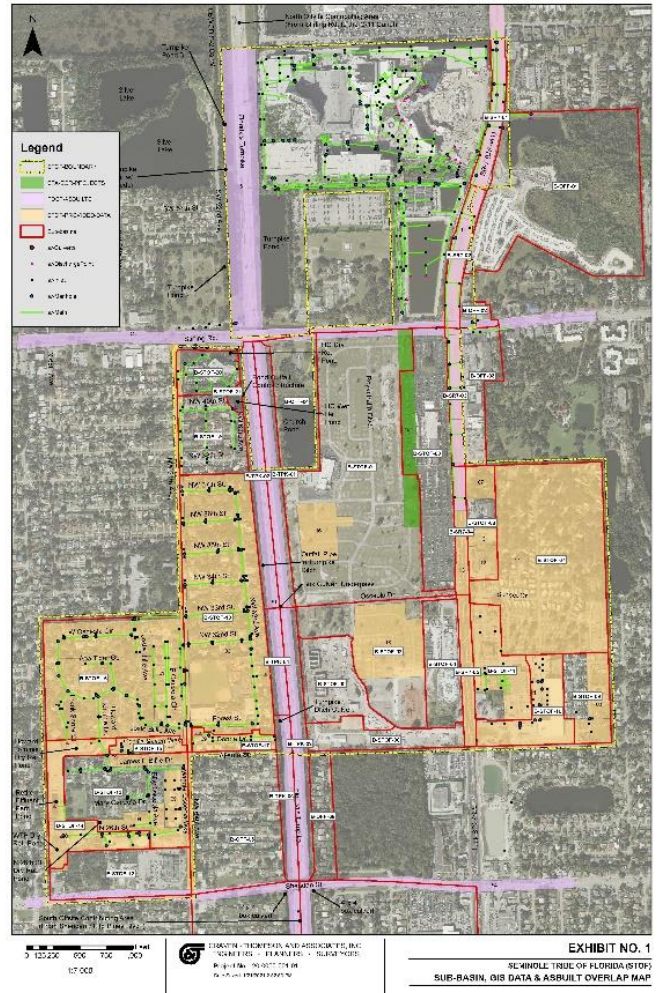
Email: ranthusfouch@semtribe.com

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

The Hollywood Seminole Reservation is generally bounded by Stirling Road on the north and by Sheridan Street on the south and includes the Hard Rock Hotel and Casino which is located north of Stirling Road. The east and west boundaries are formed by existing residential neighborhoods in the City of Hollywood. Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation

Craven Thompson acquired accurate horizontal and vertical information on every stormwater/drainage feature on the Tribe's Hollywood Reservation. We reviewed existing storm sewer surveys and as-builts that could assist with GIS location and with this information our survey crew measured each structure to get accurate horizontal and vertical information for the Tribe's GIS system. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, age, and structure condition were obtained in the field.

We modified the Tribe's GIS database to include new relevant information and to include all information from the data collection efforts and condition assessment.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Craven Thompson & Associates, Inc.	(2) FIRM LOCATION (City and State) 3563 NW 53 rd Street Fort Lauderdale, Florida 33309	(3) Role Prime – Stormwater Master Plan, G.I.S. Data Collection & Mapping
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) Role



H. ADDITIONAL INFORMATION

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.

Craven Thompson & Associates, Inc. has been a consulting industry leader in the South Florida area since our inception in 1962. With our office located in South Florida, we have established a high-profile presence through the years with a reputation of excellent service to many varied clients, performing the full range of professional services. We have worked closely with many municipalities to provide services such as survey (platting, right-of-way surveys, special purpose and topographical surveys, easements, sketch & legal descriptions, hydrographical surveys, high definition laser scanning, LiDAR, As-builts, and establishment of horizontal & vertical control), G.I.S./Geo-Spatial Services (for water, sewer, storm, plats, etc.), roadway design, landscape architecture, neighborhood improvements, water and wastewater design, GIS/Mapping, surveying, planning, storm water management, streetscape, roadway beautification and construction management.

Craven Thompson presents many distinct and unique advantages which will assure timely and cost-effective completion of projects. These advantages include the following:

- An experienced team: Craven Thompson's staff has extensive experience with various types of unusual and difficult surveying and mapping, and G.I.S. tasks.
- Full-service firm: Craven Thompson can provide all of the surveying, G.I.S., civil engineering landscape architecture, planning, and construction support services needed in-house.
- Project management: Organization lines and responsibilities are clearly defined for each project, ensuring that the best qualified individual is matched to a particular assignment.
- Familiarity with the latest surveying and G.I.S. technology and trends.
- Continuity: The Resources and staff available at Craven Thompson ensure responsive service and continuity throughout the entire project.

I. AUTHORIZED REPRESENTATIVE
 The foregoing is a statement of facts

31. SIGNATURE



32. DATE

May 23, 2022

33. NAME AND TITLE

Richard D. Pryce, P.S.M., Vice President, Surveying & G.I.S.



RFQ No. 12665-1026

(If a firm has branch offices, complete for each specific branch office seeking work.)

12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.	
a. SIGNATURE 	b. DATE May 23, 2022
c. NAME AND TITLE Richard D. Pryce, P.S.M., Vice President, Surveying & GIS	

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT*(Complete one Section E for each key person.)*

12. NAME Khamis Al-Omari, PE Senior Associate	13. ROLE IN THIS CONTRACT Program Manager	14. YEARS EXPERIENCE <table border="1"> <tr> <td>a. TOTAL 33</td> <td>b. WITH CURRENT FIRM 23</td> </tr> </table>		a. TOTAL 33	b. WITH CURRENT FIRM 23
a. TOTAL 33	b. WITH CURRENT FIRM 23				
15. FIRM NAME AND LOCATION (City and State) Hazen and Sawyer, Coral Gables, Florida					
16. EDUCATION (DEGREE AND SPECIALIZATION) MS, University of Cincinnati, 1988 BS, Ohio University, 1984		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) PE / FL (FL 90087), FL, MI, OH – Civil Engineering			

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Mr. Al-Omari has over 33 years of experience in wastewater and water engineering and project management. He currently serves as a Project Manager on the City of Ft. Lauderdale Sewer Design and Implementation Consent Order Program, responsible for program budget and schedule controls, risk management and reporting. He also served as the Program Manager managing contracts, budgets, and schedules for the \$165 million Zarqa Water and Wastewater Networks Projects in Jordan. **Professional Organizations:** Water Environment Federation, Construction Management Association of America.

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
City of Fort Lauderdale Sewer Design and Implementation Consent Order Program, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (If applicable) Ongoing
a. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm For the \$181 million Consent Order Program, Mr. Al-Omari is responsible for developing and monitoring the Master Program Schedule and Cost Model; planning and monitoring the projects defined in the Consent Order by defining their scope, deciding their project delivery method, and validating their schedule and project budget; risk management including risk identification, impact analysis, mitigation, and monitoring; quality assurance; and preparing monthly and semi-annual progress reports. Status: The program started in 2017 and is expected to be completed by 2026. Cost: \$17.2 million (estimated fee authorized to date); \$26 million (total fee anticipated); \$174.6 million (est. construction). Specific Role: Project Manager.		
Zarqa Water and Wastewater Program Management and Construction Supervision Project, Jordan	PROFESSIONAL SERVICES 2016	CONSTRUCTION (If applicable) 2016
b. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm The \$163 Million Jordan Water and Wastewater Program included five wastewater and six water projects involving construction of approximately 500 miles of water supply networks, 200 miles of wastewater collection systems, and a new regional administration building for the Water Authority of Jordan. He also served as the Project Manager for the detailed design of the \$103-million Water Network Restructuring and Rehabilitation Project (Water Network Project). The scope involved condition assessment of the existing water network, planning and design of the new water supply network (approximately 500 miles), rehabilitation of multiple water storage reservoirs, new booster station, and new pump station and reservoir. Cost: \$163 million (construction); \$19.7 million (fee). Specific Role: Program Manager.		
Miami-Dade Ocean Outfall Legislation (OOL) Program, Miami-Dade County, FL	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (If applicable) Ongoing
c. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Mr. Al-Omari served as Design Project Manager for this program. The \$2 billion master planning program addressed implications of new state regulations as well as threats of sea level rise and storm surge to their wastewater infrastructure. He managed design of three 20-MW electrical distribution buildings at the South and Central Districts WWTPs. As a subconsultant to another national firm, Hazen shares responsibility for wastewater system master planning, as well as management of the overall delivery of a long-term program encompassing design, procurement, construction, and commissioning of approximately 26 major capital projects. Status: Professional services started in 2014 and are ongoing. Cost: \$2 billion (construction) \$100 million (constructed to-date). Specific Role: Design Project Manager.		
Clarksville WWTP Improvements, Clarksville, TN	PROFESSIONAL SERVICES 2012	CONSTRUCTION (If applicable) 2012
d. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project Manager for the construction management phase of the \$72 Million WWTP Improvements, which included (among others) a Headworks Facility, RAS/WAS Pump Station, Final Clarifiers, Administration Building, yard piping, flood protection and Berm improvements, Blower Building, Aeration Basins Improvements, Sludge Dewatering Building, Site Drainage Pump Station, Chemical Building, etc. Cost: \$72 million. Specific Role: Project Manager for construction management phase; and Task Leader for the Preliminary Engineering Report and Detailed Design.		
Conner Creek 30-MG Pilot CSO Control Facility in Detroit, MI	PROFESSIONAL SERVICES 2008	CONSTRUCTION (If applicable) 2008
e. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Project Manager for the construction assistance phase of the award-winning \$186.5-million facility. The 8,500 mgd CSO facility includes screening, high-rate disinfection, settling, and skimming. Construction administration services included construction management, project controls, document control, resident engineering, construction inspection, training, startup and testing, project close-out, project performance certification, etc. Cost: \$186.5 million. Specific Role: Project Manager.		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT*(Complete one Section E for each key person.)*

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Sean FitzGerald, PE Vice President	Vice President – Conveyance Practice Leader	32	15

15. FIRM NAME AND LOCATION (City and State)

Hazen and Sawyer, Cincinnati, Ohio**Hazen**

16. EDUCATION (DEGREE AND SPECIALIZATION)

MSEnvE, University of Cincinnati, 1994

BSCE, University of Cincinnati, 1992

17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)

PE / FL – Civil Engineering, PE / OH, KY, NY, TX, Washington DC, MN

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Mr. FitzGerald has over 30 years of experience in conveyance planning, design and asset management. He serves as Hazen and Sawyer's Corporate Conveyance Practice Leader and has helped develop and implement numerous conveyance related programs across the Country utilizing industry best practices for program controls as well as using innovative tools used to manage, track, and visualize work progress. Many of these programs include detailed asset mapping, condition assessment, and rehabilitation and replacement planning and budgeting. **Professional Organizations:** Water Environment Federation: Collection System Committee; Ohio Water Environment: Association Collection System Committee; American Water Works Association; Kentucky-Tennessee Water Environment Association; Construction Management Association of America (CMAA); Water Environment Federation (WEF).

19. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Sewer Design and Implementation Program City of Fort Lauderdale, Florida	Ongoing	N/A
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm a. The County owns and operates approximately 3,137 miles of sanitary sewer lines, 174 pump stations, and over 81,000 manholes. The County contracted with Hazen and Sawyer to completely overhaul their collections system and operations. Since the program began, overall SSOs are down 50% and dry weather SSOs are down over 55%, with steady improvement expected in the coming years. Status: The program started in 2017 and is expected to continue until 2026. Cost: \$17.2 million (estimated fee authorized to date), \$26 million (total fee anticipated), \$174.6 million (est. construction). Specific Role: Project Engineer.		
(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Project Management Services and Staff Augmentation for the City's Water Utilities Program, Florida Baltimore City, Baltimore, MD	2018	2018
b. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm In 2015, Hazen and Sawyer was selected by the City of Baltimore to provide Program Management Services and Staff Augmentation for the Water Utilities program. In this role, Hazen provided staff to support multiple projects within the City's Capital Improvements Program (CIP), including water main rehabilitation and replacement projects, and AMI/R implementation. Project scopes typically consisted of rehabilitation and/or replacement of existing water mains ranging from 3 to 20 inches in diameter, replacement of various sized valves and fire hydrants, renewal of existing water services, meter vault replacement, temporary by-pass piping, sidewalk restoration, curb & gutter, and paving restoration. Cost: \$4.6 million (construction). Specific Role: Project Engineer		
(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Collection System Asset Management Program Jefferson County, Birmingham, Alabama	2009	Ongoing
c. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Jefferson County retained Hazen to develop and implement a Collection System Asset Management Program and Capital Improvement Plan (CIP). The County owns and operates approximately 3,137 miles of sanitary sewer lines, 174 pump stations, and more than 81,000 manholes as part of its collection system. Hazen has achieved tremendous success in the first few years of the program with eliminations of numerous highly active sanitary sewer overflows and informed budgeting through a robust asset management approach. Status: Program management services current contract is expected to conclude in 2023. Construction is scheduled for completion in 2030. Cost: \$49.5 million (estimated fee), >\$400 million (estimated construction). Specific Role: Project Engineer.		
(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
City of Clearwater, FL Sewer CIP Program Management Services	Ongoing	Ongoing
d. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Program management services for a citywide review and assessment of existing sewer and facility conditions to facilitate resources for collection systems evaluations and repairs. Hazen's scope of services includes a review of available information and assessment (as directed by City) of existing sewer and facility conditions to facilitate long term planning and allocation of resources for collection system evaluations and repairs. Status: Ongoing through 2026. Hazen develops periodic reports quantifying improvements to the wastewater collection system, including ongoing recommendations for future periods. Cost: \$3.0 million (fee authorized to date) \$18 million (total fee anticipated). Specific Role: Project Engineer.		
(1) TITLE AND LOCATION (City and State)	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Remedial Measures Plan (RMP) and Capacity, Management, Operations, and Management (CMOM) Implementation Services, Lexington-Fayette Urban County Government, Lexington, KY	Ongoing	Ongoing
e. (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE ☒ Check if project performed with current firm Hazen and Sawyer is assisting Lexington-Fayette Urban County Government (LFUCG) with the implementation of its RMP and CMOM related programs in compliance with their Consent Decree. With Hazen's assistance, LFUCG has saved over \$57M (based on original estimates) in the RMP and met every CMOM related Consent Decree deadline. Status: Hazen has been assisting LFUCG with RMP Implementation services since its inception in 2012 and is currently still serving as LFUCG's RMP Program Manager. Cost: \$900,000/year (RMP fee), \$300,000/year (CMOM fee). Specific Role: Project Engineer.		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Michael Marsjanik, PE Associate Vice President	Program Administration and Controls	29	8

15. FIRM NAME AND LOCATION (City and State)
Hazen and Sawyer, Baltimore, Maryland



16. EDUCATION (DEGREE AND SPECIALIZATION)
BSCEvE, Civil and Environmental Engineering, 1992

17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
PE / FL – Civil Engineering, PE / NY, MD – Civil Engineering

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

As Lead for Program Administration and Controls, Mike will oversee development of the Project Management Plan, selection and tailoring of tools and controls to be used, and management of cost and schedule throughout the project; he will ensure the project is delivered successfully on schedule and within budget. He has a proven track record serving as Program Manager on multiple large-scale water and wastewater infrastructure programs. **Professional Organizations:** Construction Management Association of America (CMAA); Water Environment Federation (WEF)

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	Water Main Replacement/Rehabilitation Program City of Baltimore, Maryland	PROFESSIONAL SERVICES 2018	CONSTRUCTION (If applicable) 2018
a.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE ☒ Check if project performed with current firm Hazen served as Program Manager assisting the City in the annual replacement/rehabilitation of approximately 15-20 miles of water mains within the City limits. Oversaw and managed a team of office engineers working on-premises performing in-house designs, design review of consultants' deliverables, project management for all capital projects, supporting the internal workforce development initiatives including comprehensive training of City staff, and construction inspection related to the Automated Meter Reading/Infrastructure program. Cost: \$4.6 million (fee). Specific Role: Program Manager.		
	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	Collection System Asset Management Program Birmingham, Alabama	PROFESSIONAL SERVICES Phase 1: 2011 Phase 2: Ongoing	CONSTRUCTION (If applicable) Phase 1: 2013 Phase 2: Ongoing*
b.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE ☒ Check if project performed with current firm The County owns and operates approximately 3,137 miles of sanitary sewer lines, 174 pump stations, and over 81,000 manholes. The County contracted with Hazen and Sawyer to completely overhaul their collections system and operations. Since the program began, overall SSOs are down 50% and dry weather SSOs are down over 55%, with steady improvement expected in the coming years. *Status: Phase 2 is ongoing. Cost: Phase 1: \$3.5 million. Phase 2: \$100 million (total to date). Specific Role: Project Advisor.		
	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	Sewershed Repair, Replacement and Rehabilitation Plan Services Baltimore County, Maryland	PROFESSIONAL SERVICES Ongoing*	CONSTRUCTION (If applicable) Ongoing*
c.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE ☒ Check if project performed with current firm Hazen and Sawyer prepared Sewershed Repair, Replacement and Rehabilitation (SRRR) Plans as part of the County's Consent Decree Program for the Bread and Cheese, Delmar, Dundalk and Eastpoint Sewersheds, totaling approximately 568,000 linear feet of gravity sanitary sewers. We reviewed and evaluated the work completed to date, conducted fieldwork, reviewed CCTV and manhole inspection data for approximately 1,400 pipes and 400 manholes, and developed a Corrective Action Recommendation Plan for each SRRR Plan. The SRRR Plans were approved by EPA and MDE. Hazen is performing design services, permitting, and engineering services during construction. *Status: Ongoing. Cost: \$6 million. Specific Role: Project Director.		
	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	Wet Weather Sewer Consent Decree, Baltimore, Maryland	PROFESSIONAL SERVICES 2009	CONSTRUCTION (If applicable) Ongoing
d.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE ☐ Check if project performed with current firm Wet weather sewer consent decree program management, including staffing, development of document management system utilizing Primavera Expedition, development of master schedule, preparation of regulatory reports, overseeing over \$90 million of study-phase consulting work, and development of more effective preventive and routine maintenance programs. Cost: \$1 billion. Specific Role: Program Manager.		
	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
	Wet Weather Sanitary Sewer Overflow Consent Decree Baltimore County, Maryland	PROFESSIONAL SERVICES 2010	CONSTRUCTION (If applicable) Ongoing
e.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE ☐ Check if project performed with current firm Oversaw a diverse staff of on-premise and office support personnel in the management of the Consent Decree work. Assisted the County in formulation of policies pertaining to the implementation of the work and ultimately ensured that the team is on top of all aspects of the work. Had overall responsibility for development and oversight of communications protocols, Primavera master schedule, standardization of reports, sewershed deliverables and public outreach efforts, document management in accordance with the recordkeeping requirements, and conducting multiple meetings (both internal and external coordination meetings). Conducted action item and status meetings to review all elements of the Consent Decree. Assisted the County in obtaining extensions for over 30 pumping station construction projects with the end result being no stipulated penalties. Managed the development and maintenance of a web portal to link all data types, including closed circuit television, manhole, smoke/dye tests, Geographic Information System, and flow monitoring to one website for easy access to users. Lastly, performed final reviews on all reports associated with the program, including Quarterly Reports, letters to Maryland Department of the Environment and U.S. Environmental Protection Agency for extensions, and all other reports required. Cost: \$850 million. Specific Role: Program Manager.		

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>	20. EXAMPLE PROJECT KEY NUMBER 1
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21. TITLE AND LOCATION (City and State) Stormwater Master Plan Modeling and Design Implementation Services City of Fort Lauderdale, Florida	22. YEAR COMPLETED <table border="1"> <tr> <td>PROFESSIONAL SERVICES</td><td>CONSTRUCTION (If applicable)</td></tr> <tr> <td>Ongoing</td><td>N/A</td></tr> </table>	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)	Ongoing	N/A
PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)				
Ongoing	N/A				

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of Fort Lauderdale Public Services Department	b. POINT OF CONTACT NAME Rares Petrica, PE Senior Project Manager, Public Works	c. POINT OF CONTACT TELEPHONE NUMBER (954) 828-7150

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Size

Delivery of a stormwater master plan and implementation of designs to address chronic flooding and other stormwater management issues in the City.

Cost

\$17.4 million (estimated fee authorized to date)
 \$20 million (total fee anticipated)
 \$200 million (est. construction for initial 7 neighborhoods)

Description

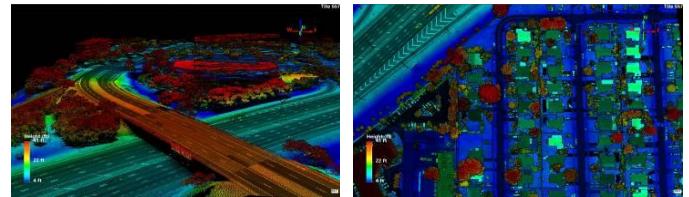
Hazen was selected to deliver a new stormwater master plan model, a prioritized stormwater/resiliency capital improvements plan, and implementation of designs to address chronic flooding and other stormwater management issues in the City.

The city covers approximately 23,000 acres of highly urbanized neighborhoods with much of its coastal land in low-lying areas, and numerous rivers and tributaries running throughout the city.

The scope of work includes data collection; city-wide hydraulic/hydrological stormwater modeling, including consideration of climate change impacts; a revised stormwater master plan with prioritized capital improvements; design, permitting, and construction services for stormwater capital improvement projects resulting from the revised stormwater master plan; watershed planning; community outreach services; and construction management services. The program is expected to result in a re-prioritized capital improvement plan to address key neighborhoods and climate change adaptation action areas.

The project team evaluated long-range solutions that perform effectively over a broad range of climatological and other uncertain future conditions. Concurrent with the planning process, the city identified seven neighborhoods with immediate needs relative to chronic stormwater and/or tidal flooding for accelerated design implementation. Improvements in the neighborhoods include a variety of flood protection and water quality measures, and for certain neighborhoods, heavy focus on resilience to tidal flooding (which will be exacerbated by SLR). Sea-wall raising, backflow prevention devices, Americans with Disabilities Act-compliant infrastructure, drainage wells, stormwater pump stations, and created wetlands are amongst the components comprising the approximately \$200 million worth of initial improvements.

Final designs are substantially complete, and projects are currently in permitting. Further modeling and project development associated with improvements beyond the original seven neighborhoods are anticipated to continue through 2021.



Example LiDAR Data

Scope of Work. Work is being authorized on a task-order basis. Tasks recently completed include the following:

- Collection of high-resolution LiDAR for the entire city
- Field collection of stormwater infrastructure for modeling and geodatabase development purposes
- New City-wide stormwater geodatabase
- Standard construction details and specifications (including Green Infrastructure)
- Comprehensive City-wide hydrologic/hydraulic modeling
- Design for seven priority neighborhoods



Further modeling and project development associated with improvements beyond the original seven neighborhoods are anticipated to continue through 2021.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT		
a. (1) FIRM NAME Craven Thompson & Associates	(2) FIRM LOCATION (City and State) Fort Lauderdale, Florida	(3) ROLE Primary Consultant
b. (1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c. (1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT (Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)	20. EXAMPLE PROJECT KEY NUMBER 2
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21. TITLE AND LOCATION (City and State) Sewer Design and Implementation Program City of Fort Lauderdale, Florida	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of Fort Lauderdale Public Services Department	b. POINT OF CONTACT NAME Omar Castellon, PE, PMP, ENV SP Assistant Public Works Director – Engineering	c. POINT OF CONTACT TELEPHONE NUMBER (954) 828-5064

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Size

Program Manager responsible for the implementation and coordination of projects to satisfy 40 Consent Order deadlines.

Cost

\$17.2 million (estimated fee authorized to date)

\$26 million (total fee anticipated)

\$174.6 million (est. construction)

**Consent
Order
Driven**

Description

The City of Fort Lauderdale's Sewer Design and Implementation Program is under way to address requirements of a Consent Order with the Florida Department of Environmental Protection (FDEP), as well as to improve the management, operation, and maintenance of its sanitary sewer collection system.

The sanitary sewer system is a regional system that serves the City as well as four large users. It consists of 186 City-operated pump stations, five regional repump stations, 113 miles of force main, and 500 miles of gravity sewer that were built between 1954 and the present.

Hazen serves as Program Manager for this effort and is responsible for implementation and coordination of projects to satisfy 40 Consent Order deadlines. The project includes conducting a risk-based prioritization and condition assessment of the City's wastewater force mains. The work includes prioritization of force mains based on probability and consequence of failure, evaluation and recommendation of alternatives for collection of additional condition assessment data where needed, and development of recommendations for repair or replacement through short- and long-term planning periods.

Key components of the Sewer Design and Implementation Program include:

- Development of a Mapping Plan and mapping of the City's sanitary sewer collection system.
- Development and Implementation of an Asset Management, Capacity Management, Operation, and Maintenance (AM-CMOM) Program for the City's wastewater collection and treatment systems. AM-CMOM efforts include condition assessment, risk analysis, and prioritization of assets for rehabilitation and/or replacement.
- Risk-based prioritization of pipeline repairs.

- Rehabilitation or replacement of approximately 75,000 linear feet of force main.
- Development, calibration, and application of a Wastewater Collection and Transmission System Hydraulic Model using Innovyze software. The model included 113 miles of force mains and more than 170 pump stations.
- Development and calibration of a Water Distribution System Hydraulic Model using Innovyze software. The model included 770 miles of pipes.
- Multi-phase Force Main Condition Assessment, consisting of desktop analysis of all force mains and targeted physical inspection of medium and high-risk force mains.
- Infiltration and inflow (I/I) reduction programs, including CCTV inspection and remediation where required, in six pump station basins (A-7, A-18, A-19, A-21, D-40, and D-43).
- New construction, rehabilitation or replacement of seven pump stations (A-12, B-10, D-41, D-45, A-13, D-11, and D-38), including in-kind services for one of the pump stations and installation of approximately 3,800 linear feet of force main via Horizontal Direction Drilling to offset FDEP penalties.
- Program management of the City's implementation of the Cityworks Enterprise Asset Management System.
- Reporting the progress of all Consent Order activities to FDEP on a semi-annual basis.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a. (1) FIRM NAME Craven Thompson & Associates	(2) FIRM LOCATION (City and State) Fort Lauderdale, Florida	(3) ROLE Primary Consultant
b. (1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Coral Gables, Florida	(3) ROLE Subconsultant
c. (1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Cincinnati, Ohio	(3) ROLE Subconsultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT		20. EXAMPLE PROJECT KEY NUMBER
<i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>		3

21. TITLE AND LOCATION (City and State) Project Management Services and Staff Augmentation for the City's Water Utilities Program, Florida Baltimore City, Baltimore, MD	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2018	CONSTRUCTION (If applicable) 2018

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Baltimore City Department of Public Works, Baltimore, MD	b. POINT OF CONTACT NAME Hernan Guadalupe Engineer II	c. POINT OF CONTACT TELEPHONE NUMBER (410) 396-8198

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Size

Hazen provided Program Management Services and Staff Augmentation to support multiple projects within the City's CIP.

Cost

\$4.6 million (construction)

Description

As Program Managers between 2015 and 2018, Hazen and Sawyer is proud to have assisted the City in exceeding their water main replacement goals within that period.

In 2015, Hazen and Sawyer was selected by the City of Baltimore to provide Program Management Services and Staff Augmentation for the Water Utilities program. In this role, Hazen provided staff to support multiple projects within the City's Capital Improvements Program (CIP), including water main rehabilitation and replacement projects, and AMI/R implementation. Project scopes typically consisted of rehabilitation and/or replacement of existing water mains ranging from 3 to 20 inches in diameter, replacement of various sized valves and fire hydrants, renewal of existing water services, meter vault replacement, temporary by-pass piping, sidewalk restoration, curb & gutter, and paving restoration.

To assist in the implementation of capital projects, Hazen provided on-site project managers, design reviewers, in-house CADD/designers, and field construction inspectors. Project Managers worked closely with City staff in managing schedule, cost and quality of on-going capital projects. Roles included development of scope, tracking performance and schedule, communications and progress meetings with design consultants contracted separately with the City, coordination of agency comments of design deliverables and coordination with the City's Office of Asset Management. Hazen also provided technical review services for all design deliverables, typically including 30%, 70%, 90%, and bid-ready documents. Hazen senior engineers provided detailed, focused review comments, typically for all elements of each design deliverable from 30% design to final bid ready documents. For each review, these technical reviews included special focus on valve shut down, sequencing, and bypass plan requirements. Overall, Hazen managed and/or performed technical design reviews for over 30 deliverables.

As part of project management and technical reviews, Hazen assisted the City in their internal workforce development initiatives with

the development of a comprehensive training session for City staff working on Water Utilities Projects. Since September 2016, Hazen prepared and conducted, or organized, two training programs, consisting of over 50 training sessions, focused on the technical and managerial aspects of water utility projects. Session topics have included detailed water main replacement design, CADD standards, project management, engineering computations and standard specifications. The graphic below summarizes the training conducted by our team under this contract.

In addition to staff augmentation under this program, Hazen provided construction inspection services in support of the Advanced Metering Infrastructure and Water Meter System Installation projects city-wide, as well as other water capital projects. Hazen provided an inspector on the WC1346 Elm Avenue 48" Joint Repairs emergency contract and rapidly deployed seven program management staff inspectors assigned to the WC1353 AMI/R Urgent Need Metering Infrastructure Repair & Replacement, Various Repairs.

As part of our programmatic roles, Hazen also assisted the City update multiple standardization documents, including Master Specifications, Standard Notes, internal design review guidelines, cost estimating templates, and the CAD standards manual. In addition, we worked with the City to enhance capital project planning by creating a P6 master schedule with cash flow. This tool was used to track progress of replacement as well as assist in the planning of replacement goals for the outer years, based on anticipated funding.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT		
(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c. Hazen and Sawyer	Coral Gables, Florida	Subconsultant
c. Hazen and Sawyer	Cincinnati, Ohio	Subconsultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>	20. EXAMPLE PROJECT KEY NUMBER 4
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21. TITLE AND LOCATION (City and State) Collection System Asset Management Program Jefferson County, Birmingham, Alabama	22. YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (If applicable)
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23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Jefferson County Commission Birmingham, AL	b. POINT OF CONTACT NAME Daniel White, PE, Deputy Director, Environmental Services Department	c. POINT OF CONTACT TELEPHONE NUMBER (205) 214-8610

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Size

Large complex program where Hazen is coordinating and all field inspections, planning, design, and construction for over \$400 Million in projects. Developed robust project controls, dashboards and other tools to efficiently allocate resources and manage vast amounts of data.

Status

Program management services current contract is expected to conclude in 2023. Construction is scheduled for completion in 2030.

Cost

\$49.5 million (estimated fee)

>\$400 million (estimated construction)

Description

Jefferson County retained Hazen to develop and implement a Collection System Asset Management Program and Capital Improvement Plan (CIP).

The County owns and operates approximately 3,137 miles of sanitary sewer lines, 174 pump stations, and more than 81,000 manholes as part of its collection system.

Jefferson County is under a 1996 Consent Decree to address sanitary sewer overflows in the collection system, but was under bankruptcy, and needed to develop and implement a highly efficient and effective program to address aging infrastructure, as well as significant infiltration and inflow. Hazen was hired to help the County achieve this goal and to provide full program management for implementation, including the following completed within the last 5 years:

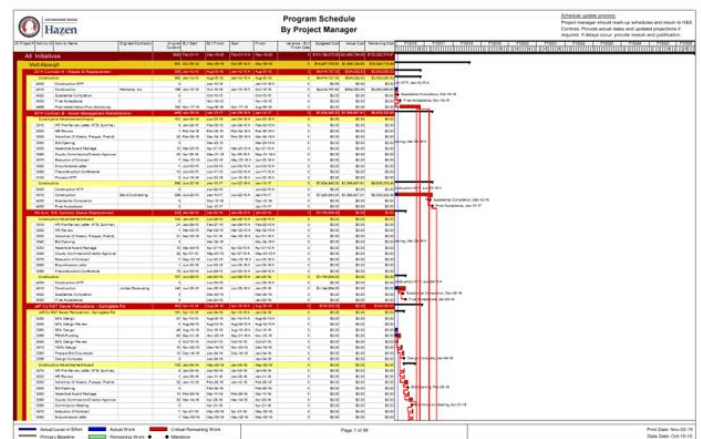
- Developed an ongoing cash loaded P6 master schedule to manage all aspects of the program from planning to design and construction.
- Developing plans and specifications for SSES field work in more than 400 priority minibasins.
- Managing all field inspections
- Coordinated with Cityworks team to develop field forms that enables critical data to be tracked in Cityworks.
- Managing all construction totaling more than \$131M to date with an additional \$250 million in next five years.
- Managing and analyzing more than 500 flow meter locations.
- Assessing CCTV data for more than 1,200 miles of pipe.

- Developing plans and specifications for rehabilitation and repairs for more than 500,000 LF.
- Conducted detailed field condition assessments of 178 pump stations including development of prioritized

- 156 pump stations
- 69 miles of force main
- 922 miles of gravity sewer

- Conducting preliminary design and managing more than 15 firms' detailed designs for all pipeline replacements and capacity improvements.
- Conducting pre- and post-construction flow monitoring and I/I reduction effectiveness evaluations.
- Optimization of I/I reduction activities.
- Developing and tracking of program KPIs in Power BI.

Hazen has achieved tremendous success in the first few years of the program with eliminations of numerous highly active sanitary sewer overflows and informed budgeting through a robust asset management approach.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
a.	(1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Coral Gables, Florida	(3) ROLE Subconsultant
b.	(1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Cincinnati, Ohio	(3) ROLE Subconsultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT		20. EXAMPLE PROJECT KEY NUMBER
<i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>		5

21. TITLE AND LOCATION (City and State) City of Clearwater Sewer CIP Program Management Services	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable) N/A

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER City of Clearwater, FL	b. POINT OF CONTACT NAME Todd Kuhnel Senior Engineering Specialist	c. POINT OF CONTACT TELEPHONE NUMBER (727) 562-4798

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Size

Program management services for a citywide review and assessment of existing sewer and facility conditions to facilitate resources for collection systems evaluations and repairs.

Status

Ongoing through 2026

Cost

\$3.0 million (fee authorized to date)

\$18 million (total fee anticipated)

Description

Hazen's scope of services includes a review of available information and assessment (as directed by City) of existing sewer and facility conditions to facilitate long term planning and allocation of resources for collection system evaluations and repairs. This includes a review of the City's Capacity, Management, Operations and Maintenance (CMOM), force main condition assessment, WWCS's Master Plan maintenance recommendations and flow monitoring data. Hazen also provides construction administration services overseeing City contractor work involving sewer point repairs, I&I identification and remediation, sewer main (gravity & force) and lateral replacement/upsizing and/or relocation, utility conflict resolution, lift station & water reclamation facility repair/remediation, cleaning and CCTV of gravity mains/laterals, cured-in-place pipe (CIPP), and manhole repair and coating. As part of this Hazen oversees the confirmation and repairs of sewer defects previously identified by the City.

Professional design services are included as well as as-built review and approval followed by Record Drawing development for existing projects.

The City has also collected a significant amount of data using smoke and dye testing in addition to flow monitoring. Hazen is using the data collected to direct the ongoing efforts of the City's current five WWCS repair Contractors for:

- Sanitary Sewer Trenchless Reconstruction
- Sewer Cleaning and Televising Inspection
- Manhole Surfacing

- Sanitary Cleanout and Lateral Repairs
- Additional Smoke and Dye Testing

Hazen also provides strategic review and prioritization of pending projects. Projects are added to the prioritization list as they are developed, either as part of the City's normal Capital Improvement Plan (CIP) process or as they are identified and developed under this program. After City approval of a proposed repair, Hazen oversees the City's sewer repair contractors for activities including scheduling, MOT, permits, public notifications, procurement, and preparation of record drawings.

Hazen develops periodic reports quantifying improvements to the WWCS system, including ongoing recommendations for future periods.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
a.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
b.	(1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Cincinnati, Ohio	(3) ROLE Subconsultant
c.	(1) FIRM NAME Hazen and Sawyer	(2) FIRM LOCATION (City and State) Baltimore, Maryland	(3) ROLE Subconsultant

ARCHITECT - ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Hazen and Sawyer			3. YEAR ESTABLISHED 1951	4. UNIQUE ENTITY IDENTIFIER
2b. STREET 999 Ponce de Leon Boulevard, Suite 1150			5. OWNERSHIP	
2c. CITY Coral Gables	2d. STATE FL	2e. ZIP CODE 33143	a. TYPE Corporation (Employee Owned)	
6a. POINT OF CONTACT NAME AND TITLE Jayson Page, PE, Vice President			b. SMALL BUSINESS STATUS	
6b. TELEPHONE NUMBER (305) 443-4001	6c. E-MAIL ADDRESS jpage@hazenandsawyer.com		7. NAME OF FIRM (If block 2a is a branch office) Hazen and Sawyer	
8a. FORMER FIRM NAME(S) (If any)			8b. YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS*		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	131	1	C15	Construction Management	9
06	Architect	13		C18	Cost Estimating	2
08	CADD Technician	109		D02	Dams (Earth, Rock)	6
10	Chemical Engineer	25	1	D03	Desalination (Process & Facilities)	2
12	Civil Engineer	204	6	D04	Design-Build	8
15	Construction Inspector	28	1	E03	Electrical Studies & Design	2
16	Construction Manager	77	1	E07	Energy Conservation	4
18	Cost Engineer/Estimator	7		E08	Engineering Economics	5
20	Economist	5		E09	Environmental Impact Studies	6
21	Electrical Engineer	78		H04	HVAC	2
23	Environmental Engineer	377	5	I03	Industrial Waste Treatment	1
24	Environmental Scientist	28		P05	Planning (Comm., Reg., Area, State)	6
30	Geologist	1		P06	Planning (Site, Install. and Project)	3
32	Hydraulic Engineer	31		P07	Plumbing and Piping Design	2
39	Landscape Architect	1		S04	Sewage Collect, Trmt and Disposal	10
41	Mechanical Engineer	40	1	S07	Solid Wastes	1
47	Planner: Urban/Regional	1		S10	Surveying; Platting; Mapping	2
53	Scheduler	1		S11	Sustainable Design	6
57	Structural Engineer	48	1	S13	Stormwater Handling & Facilities	9
62	Water Resources Engineer	85		T02	Testing & Inspection Services	5
	Other Employees	6		W02	Water Resources; Hydrology; Ground Water	8
	Total	1296	17	W03	Water Supply; Trmt and Distribution	9

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER	
a. Federal Work	6	1. Less than \$100,000	6. \$2 million to less than \$5 million
b. Non-Federal Work	10	2. \$100,00 to less than \$250,000	7. \$5 million to less than \$10 million
c. Total Work	10	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million
		5. \$1 million to less than \$2 million	10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE April 26, 2022
c. NAME AND TITLE Jayson Page PE, Vice President	

City of Fort Lauderdale
E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12665-1026

12. NAME John Cestnick, PSM, IAM	13. ROLE IN THIS CONTRACT Program Director	14. YEARS EXPERIENCE <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">a. TOTAL</td> <td style="width: 50%; border-bottom: 1px solid black;">b. WITH CURRENT FIRM</td> </tr> <tr> <td style="text-align: center;">26</td> <td style="text-align: center;">23</td> </tr> </table>		a. TOTAL	b. WITH CURRENT FIRM	26	23
a. TOTAL	b. WITH CURRENT FIRM						
26	23						
15. FIRM NAME AND LOCATION (City and State) Woolpert, Inc., Miami, Florida							
16. EDUCATION (DEGREE AND SPECIALIZATION) B.S., Surveying Engineering, University of New Brunswick		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Surveyor and Mapper: Florida Certified Asset Management					
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)							

19. RELEVANT PROJECTS			
a.	(1) TITLE AND LOCATION (City and State) Cityworks Asset Management System Implementation, Fort Lauderdale, FL	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (If Applicable) N/A	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE [X] Check if project performed with current firm Project Manager responsible for project oversight and contract compliance. In 2019 the City of Fort Lauderdale selected Woolpert to implement a new Cityworks AMS GIS-centric asset management system for the water, wastewater, and stormwater divisions. Also included within the project was system integrations between Cityworks and their Cayenta meter billing system, and the QAlert 311 system.		
b.	(1) TITLE AND LOCATION (City and State) Asset Management Implementation GIS/GPS Utility Mapping and Data Conversion, Fort Lauderdale, FL	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2007	CONSTRUCTION (If Applicable) N/A	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE [X] Check if project performed with current firm Phase Manager for all surveying and inventory services. Between 2000 and 2002, Woolpert assisted the Public Services Department in developing and implementing a state-of-the-art asset management system to provide accurate, current information on its utility infrastructure. After initial planning, Woolpert provided a GPS inventory of water, sewer, and stormwater utility structures, as well as an inventory of light poles, to build GIS layers in geodatabase format. Woolpert then integrated the GIS with the City's Hansen CMMS, and developed specifications and applications for maintaining, querying, and viewing the asset data in a web environment.		
c.	(1) TITLE AND LOCATION (City and State) Onsite GIS Support Services WASD, Miami, FL	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2018	CONSTRUCTION (If Applicable) N/A	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE [X] Check if project performed with current firm Project Manager responsible for project oversight and contract compliance. Between January 2013 and November 2016, Woolpert had as many as 40 GIS Technicians onsite at WASD providing GIS conversion services to assist the County in updating their water and sewer utility GIS. Onsite staff used a custom application called <i>GIS Atlas Maintenance System (GAMS2)</i> to enter new data; used GAMS2 to research and correct reported GIS data errors; used Esri GIS tools to validate and modify GIS layers; interpreted water and sewer as-builts; provided research using various WASD systems; and QA/QC various utility attribute and feature information.		
d.	(1) TITLE AND LOCATION (City and State) GIS/GPS Water and Sewer Utility Survey WASD, Miami, FL	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2020	CONSTRUCTION (If Applicable) N/A	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE [X] Check if project performed with current firm Project Manager responsible for all surveying activities. Beginning with a nine square-mile pilot area and continued with full conversion of the 414 square-mile service area, provided services to build a GIS that support both water and sewer distribution networks by locating surface utility features. Woolpert worked extensively with a Trimble Navigation software programmer in co-developing a pen based RTK data collection software. This allowed for the quick and efficient data collection of over 180,000 water and sewer utility features to accuracies of 3.5 centimeters. After the successful completion and client acceptance of the pilot area, John managed the full production of all field aspects of the project.		
e.	(1) TITLE AND LOCATION (City and State) Utility GIS/GPS Utility Mapping and Data Conversion, Deerfield Beach, FL	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES 2014	CONSTRUCTION (If Applicable) N/A	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE [X] Check if project performed with current firm Project Manager responsible for the successful completion of the project. Woolpert was contracted to provide a citywide inventory of their water, sewer, and stormwater utility systems. Following the field data collection, we used existing As-Built and other utility source documentation to build utility networks using a refined version of the Esri Local Government Information Model. Contracted task items included a project management plan; project communications website; field and GIS procedures manuals; geodatabase design documentation; personal geodatabase deliverables; project training; and RTD GPS utility mapping for the entire city.		

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, If not specified.
Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY
NUMBER

1

21. TITLE AND LOCATION (City and State)



GIS Utility Mapping and GPS Data Collection
Fort Lauderdale, FL

22. YEAR COMPLETED

PROFESSIONAL SERVICES
2007

CONSTRUCTION (if Applicable)
N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

City of Fort Lauderdale

b. POINT OF CONTACT NAME

Ian A. Wint

c. POINT OF CONTACT TELEPHONE NUMBER

954.828.6332

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Woolpert assisted the Public Services Department in developing a state-of-the-art asset management system using GPS derived positions of features and customized information system tools. This included planning, collecting data, designing the database, converting the data, developing custom applications, and providing maintenance solutions.

Master Planning. Using our proven planning methodology, Woolpert conducted interviews by teaming Fort Lauderdale's staff experience with Woolpert's technical knowledge. We also evaluated the City's business processes and workflows and recommended changes to reengineer their processes to flow more efficiently.

Data Collection. Woolpert collected GIS data by scanning, indexing, and georeferencing available source documents, such as City atlases, sewer books, intersection detail drawings, and as-built drawings. Field crews then used GPS and pen-based computers to conduct a field inventory of more than 45,000 water, sewer, and stormwater utility features and 13,000 light poles. Utility features were surveyed using RTK technology and provided horizontal and vertical locations of ± 0.2 -foot accuracy. Light poles were surveyed to an accuracy of ± 3 feet using RTD survey techniques.

Database Design. Woolpert first conducted a conceptual database design, organizing the data and deciding what, where, and how it would be stored. Woolpert then created a physical database model for the City's GIS data.

Data Conversion. Once the database was created, Woolpert converted the field-collected data into the following layers: water force mains, gravity sewers, stormwater, environmentally sensitive areas, customer service address, and street annotation. We used proprietary automated tools to check the quality of the data before migrating it from ArcInfo coverages to ArcInfo 8.x geodatabase.

Application Development. The City and Woolpert identified the need for three customized applications and developed software requirements and specifications for each. Woolpert implemented the following three applications:

- **GIS Utility Billing System Integration.** The application extracts and collects data from the existing utility billing system and makes it available to the GIS. ArcGIS Maintenance application combines standard ESRI ArcGIS desktop functions with custom tools to provide a user interface that enables maintenance of an ESRI ArcSDE database.
- **Fort Lauderdale Infrastructure, Public Property, and Environmental Resources.** The application uses custom ESRI, ArcIMS, and Visual Basic development tools to distribute water, sewer, and stormwater utility data to internal and external users over the Internet or intranet. Woolpert also completed the application development necessary to integrate the GIS data into the City's existing Hansen System.
- **Maintenance.** To bring the GIS data to the point where the City can begin routine maintenance of its utility assets, Woolpert incorporated all data changes that had occurred since the data conversion began. The GIS based management system helps the City keep accurate inventories of its assets and spare parts, predict maintenance schedules, and make changing information more efficient by reflecting actual conditions. These benefits make sustainability more cost effective.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Woolpert, Inc.	(2) FIRM LOCATION (City and State) Miami, FL	(3) ROLE GIS Utility Mapping, GPS Data Collection
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

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F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, If not specified. Complete one Section F for each project.)

2

21. TITLE AND LOCATION (City and State)

University of Miami, CMOM Updates, Coral Gables,
Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES

Ongoing

CONSTRUCTION (if Applicable)

NA

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Corradino Group

b. POINT OF CONTACT NAME

Robert Regalado

c. POINT OF CONTACT TELEPHONE NUMBER

305.594.0735

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Woolpert was contracted by The Corradino Group to ensure University of Miami (UM) compliance with a Miami-Dade County Consent Decree requiring conformance to State Code and the Federal Clean Water Act for the operation of sanitary sewer collection systems, as well as a proactive system management approach to prevent sanitary sewer overflows (SSO). As a utility volume sewer customer, UM needed Woolpert's assistance in providing a CMOM Plan of Compliance documenting how they would meet the decree requirements as well as updating the University's Sanitary Sewer Master Plan (SSMP). The SSMP incorporated University planning information, past flow data, discussions with University staff and field inspections to provide recommendations to the University. Recommendations were made to ensure adequate sewer capacity for both gravity sewer basins, downstream pump stations and force mains, as necessary. The impact of on-campus growth both in the near-term (within two years) and mid-term (two-five years in the future) planning horizons were evaluated to propose phasing the recommended projects to coincide with the timing of the future demands on the system. Budget-level cost estimates were prepared to allow the University to prepare long-term funding plans for building sufficient system capacity, which are an important part of the regulatory-required CMOM program.

The effect of a student housing complex currently under construction and its proposed sanitary sewer pump station was evaluated for the existing University facilities that would be impacted by the project. Woolpert provided an evaluation of these impacts to the existing upstream pump station No. 2 and nearby pump station No. 3 and pump station No. 7, as well as recommendations for the future flow conditions of the proposed pump station pump station No. 18 within the housing complex. Recommendations included pertinent consistency and constructability observations relative to the sanitary sewer design plans performed by UM's design consultant for the student housing complex.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Woolpert, Inc.	(2) FIRM LOCATION (City and State) Miami, FL	(3) ROLE Engineering, Compliance Services
	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, If not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT REFERENCE NUMBER
12665-1026
3

21. TITLE AND LOCATION (City and State)



Consulting Services Relating to Consent Decree's CMOM,
Miami, FL

22. YEAR COMPLETED

PROFESSIONAL SERVICES
2019

CONSTRUCTION (if Applicable)
N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Miami Dade County Water and Sewer
Department (WASD)

b. POINT OF CONTACT NAME

Juan Bedoya

c. POINT OF CONTACT TELEPHONE NUMBER

305.439.0038

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Miami-Dade WASD provides drinking water and wastewater disposal services to nearly 2.3 million residents. Woolpert provided Miami-Dade County with a multitude of surveying, engineering and other consulting and technical services to comply with a Consent Decree from the US Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP), that requires the preparation of CMOM Programs by the County, with WASD as the responsible wastewater system operating entity.

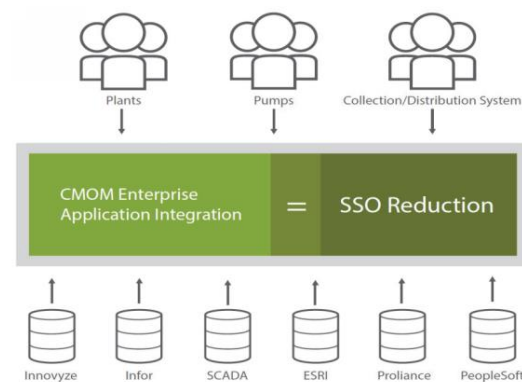
Woolpert assisted WASD with the development of the following programs over the course of this CMOM contract:

- SSO Response Plan
- Information Management System Program
- GIS
- Sewer System Asset Management Program
- Gravity Sewer System Operation and Maintenance Program
- Pump Station Operations and Preventative Maintenance Program
- Force Main Operations, Preventative Maintenance and Assessment/Rehabilitation Program
- Force Main Criticality Assessment and Prioritization Program
- Force Main Rehabilitation and Replacement Program
- WWTP Operations and Maintenance Program

Additionally, climate change impacts on the wastewater collection and transmission system (WCTS) were evaluated under each of the above programs. The CMOM programs were intended to reduce SSOs through the improvement of the operation and maintenance of County wastewater collection, transmission and treatment systems. A key component to achieve this goal was inclusion and integrating WASD's information systems and databases to facilitate improved decision making and allow WASD personnel at all levels better access to data currently stored in standalone databases and to improve reporting capabilities.

Woolpert reviewed and evaluated WASD CMOM Programs' procedures and policies that were currently in place and utilized this information to identify needed refinements and enhancements to the existing programs. Special focus was placed on all related Information Management Systems to understand existing capabilities, existing uses and components of existing systems. This allowed Woolpert to develop an optimal approach that will maximize the value of work that had already been performed by WASD staff. This process also was used to identify interdependencies among the CMOM programs and establish protocols to improve integration of existing and supplemental practices that were compatible with and complementary to the objectives and goals of each of the affected CMOM program elements.

Finally, upon EPA/FDEP approval of each CMOM Program, the client assessed the need for Woolpert to provide implementation assistance. This assistance included implementation with the EPA-approved Gravity Sewer System Operations and Maintenance Program plan prepared by others in addition to the CMOM Programs prepared by Woolpert.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Woolpert, Inc.	(2) FIRM LOCATION (City and State) Miami, FL	(3) ROLE Survey, Engineering, Consulting
	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, If not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

4

21. TITLE AND LOCATION (City and State)



Subsurface Utility GIS and Surveying and Mapping Services, Miami, FL

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2017

CONSTRUCTION (if Applicable)

N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Miami Dade WASD

b. POINT OF CONTACT NAME

Jose Lopez

c. POINT OF CONTACT TELEPHONE NUMBER

305.596.8461

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Woolpert was contracted to perform utility mapping and GIS services at the Port of Miami through five separate work orders.

Seaboard Subsurface Utility Engineering (SUE) Services

Woolpert performed surveying and engineering services for locating and mapping all utilities in support of future project development. The work included a complete subsurface investigation to conform to ASCE Quality Levels B, C, and D. The work entailed a review of preliminary engineering design, topographic surveying, location of existing pipelines, integrating orthophotography images for background mapping, preparation of site plans for future construction projects, and utility investigation reports.

Onsite GIS Consulting Services

Woolpert completed a full GIS Needs Assessment for the Port of Miami IT systems and operations to determine opportunities to leverage GIS and their asset management system. Services included designing full enterprise-wide geodatabase design for communications, water, sewer, stormwater, and electrical assets. Future phases may include developing custom web-based applications and system integration between ship berth systems, security systems, and GIS.

Quality Level D SUE Services

Woolpert was contracted to design and build ArcGIS geodatabases for each of the five existing utilities at the Port of Miami to include: water, sanitary sewer, stormwater, communication, and electrical. Each geodatabase design was developed based on existing source documents. Following the approval of each design, Woolpert GIS/Survey technicians used all of the available Port of Miami source documentation to compile each utility according to the ASCE 38-02 Quality Level D standards.



Quality Level B SUE Services (Westside)

Woolpert was contracted to field survey all underground utilities for approximately one-third of the Port of Miami. Deliverables included populated ArcGIS geodatabases according to the ASCE 38-02 Quality Level B utility locating standards.

Quality Level B SUE Services (Eastside)

Woolpert was retained to survey and map the location of the Port's underground utilities. All final data was processed and delivered within Esri ArcGIS geodatabases, separated by utility type.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Woolpert, Inc.	(2) FIRM LOCATION (City and State) Miami, FL	(3) ROLE Utility Mapping/Engineering, GIS Services
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

STANDARD FORM 330 (REV. 8/2016) PAGE 6

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, If not specified.
Complete one Section F for each project.)

20. EXAMPLE PROJECT REFERENCE NUMBER

5

21. TITLE AND LOCATION (City and State)



Onsite GIS Support Services, Miami, FL

22. YEAR COMPLETED

PROFESSIONAL SERVICES

2018

CONSTRUCTION (if Applicable)

N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

Miami-Dade WASD

b. POINT OF CONTACT NAME

Jose Lopez

c. POINT OF CONTACT TELEPHONE NUMBER

305.596.8461

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

The Miami-Dade WASD GIS is the system of record for the majority of the field assets maintained in their Enterprise Asset Management System (EAMS). An existing backlog of thousands of as-builts and construction drawings hindered WASD's ability to accurately track inventory and maintenance costs associated with these assets. Conversion and migration of this utility data into the WASD GIS was vital to supporting WASD's compliance with a Federal Consent Decree program. WASD contracted Woolpert to provide onsite GIS staffing resources to assist with eliminating the GIS backlog of as-builts and construction drawings and converting all utility related information to GIS geodatabases.

Between January 2013 and June 2018, Woolpert provided as many as 40 GIS Analysts onsite at WASD supporting GIS conversion services to assist the County in updating their water and sewer utility GIS. Onsite staff used a custom application called GIS Atlas Maintenance System (GAMS2) to enter new data; used GAMS2 to research and correct reported GIS data errors; used Esri GIS tools to validate and modify GIS layers; interpreted water and sewer as-builts; provided research using various WASD systems; and QA/QC various utility attribute and feature information.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME Woolpert, Inc.	(2) FIRM LOCATION (City and State) Miami, FL	(3) ROLE GIS Services
b.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c.	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE

STANDARD FORM 330 (REV. 8/2016) PAGE 6

1. SOLICITATION NUMBER (If any)

(If a firm has branch offices, complete for each specific branch office seeking work.)

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

**11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES
OF FIRM
FOR LAST 3 YEARS**
(Insert revenue index number shown at right)

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than \$100,000
2. \$100,000 to less than \$250,000
3. \$250,000 to less than \$500,000
4. \$500,000 to less than \$1 million
5. \$1 million to less than \$2 million
6. \$2 million to less than \$5 million
7. \$5 million to less than \$10 million
8. \$10 million to less than \$25 million
9. \$25 million to less than \$50 million
10. \$50 million or greater

AUTHORIZED FOR LOCAL REPRODUCTION

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



FIRM'S ABILITY TO MEET TIME AND BUDGET REQUIREMENTS

Our careful attention to detail and defined processes have helped ensure that projects are delivered successfully, meeting the highest standard of care while on schedule and on budget. Whether in the beginning stages of the project, currently working through the design, or in the construction phase, experience and insight help our projects succeed every step of the way.

While every civil engineering design is unique, our teams have developed steps around several key milestones that can help save time, money and potential rework for our clients. Success looks different for every project, which is why our team's first priority is to listen. Whether it's cost, schedule, quality or community impact, we develop succinct criteria standards to review during and after project completion, so the focus never deviates from creating a successful project.

By looking at the design process from our client's perspective, we are able to see a comprehensive view of the project and apply our past experience to develop unique solutions. Our team maintains constant communication, both internally across disciplines and with the municipal client, so all parties are aware of the progress on deliverables, design, and permitting. This collaborative relationship with all parties, from the kick-off meeting to project certification, helps ensure an accurate and timely final product.

SUSTAINABLE BUSINESS PRACTICES

Craven Thompson is committed to lessening its environmental impact and advocating green initiatives throughout the company. Our goal is to benefit our community and employees while setting the bar in our profession. The following is a brief summary of our green policies and procedures which were initiated over the past decade:

- At Craven Thompson the recycling of paper goods is not limited to those containing confidential information. All paper, including newspapers, magazines and inter-office memos are thoroughly and completely shredded in order to expedite the recycling process.
- Craven Thompson has instituted effective recycling practices and significantly reduced our paper consumption. We continually seek to minimize the volume of paper used in printing, copying, data storage and communication. We have increased our focus on paperless technology and developed electronic templates for a wide variety of internal and external communications. We have also converted the vast majority of our reports, newsletters and bulletins from hard copy to electronic versions. Internal campaigns urge our personnel to view documents on-screen whenever possible; if paper copies are necessary, we use recycled paper for printing and copying. Duplex printing set as the default for "two-sided" use is an increasingly effective way to achieve our paper reduction goals.
- In addition to paper recycling, we work with our local property managers to minimize disposables and reuse equipment and supplies wherever possible. We systematically recycle large volumes of printer/photocopier cartridges, batteries and plastics.
- Craven Thompson conserves energy by using more efficient lighting systems. We steadily encourage energy-conscious practices across the company. Our offices promote energy efficiency through motion-sensitive light switches.

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



BUSINESS INFORMATION AND STRUCTURE

For over sixty (60) years Craven Thompson & Associates has provided consulting services to governmental agencies throughout South Florida. We have provided some or all of the following services to numerous clients including: civil engineering, landscape architectural services, utilities engineering, land surveying, GIS mapping, and water, wastewater, utility management.

Craven Thompson was founded in 1962 and has a large group of professional engineers, graduate engineers, surveyors, G.I.S. specialists, landscape architects and planners. Craven Thompson has been providing engineering, surveying and CEI services for the past sixty (60) years, landscape architectural services for the past thirty-seven (37) years, and G.I.S. services for the past sixteen (16) years. Craven Thompson has sixty-nine employees consisting of four Landscape Architects, two planners; twenty-five civil engineers, twenty-one surveyors & GIS specialists (includes field crews), one construction manager, eight construction inspectors; and seven administrative personnel - four of which are clerical. Craven Thompson and our sub-consultants have extensive experience with projects involving roadways, complete streets, stormwater drainage, water, wastewater, landscape architecture, surveying, and G.I.S.

Firm Ownership

Thomas M. McDonald

President / 100% Owner

Craven Thompson & Associates, Inc.

3563 NW 53rd Street

Fort Lauderdale, Florida 33309

Phone: (954) 739-6400 / Email: tmcdonald@craventhompson.com

Organizational Structure

Patrick J. Gibney, P.E., V.P., Engineering

Craven Thompson & Associates, Inc.

3563 NW 53rd Street

Fort Lauderdale, Florida 33309

Phone: (954) 739-6400

Email: pgibney@craventhompson.com

Richard D. Pryce, P.S.M.

Vice President, Surveying & G.I.S.

Craven Thompson & Associates, Inc.

3563 NW 53rd Street

Fort Lauderdale, Florida 33309

Phone: (954) 739-6400

Email: rpryce@craventhompson.com

Joseph D. Handley, P.L.A.

Vice President, Planning & Landscape Architecture

Craven Thompson & Associates, Inc.

3563 NW 53rd Street

Fort Lauderdale, Florida 33309

Phone: (954) 739-6400

Email: jhandley@craventhompson.com

Location of Headquarters, Number and Location of Branch Offices

Corporate Headquarters

3563 NW 53rd Street

Fort Lauderdale, Florida 33309

One Branch Office:

4723 W. Atlantic Avenue, Suite 12A

Delray Beach, Florida 33445

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



PROFESSIONAL LICENSES / CERTIFICATIONS

Craven Thompson & Associates, Inc.

Licensee						
Name:	Craven, Thompson & Associates, Inc.		License Number:	271		
Rank:	Registry		License Expiration Date:			
Primary Status:	Current		Original License Date:	05/10/1977		
Related License Information						
License Number	Status	Related Party	Relationship Type	Relation Effective Date	Rank	Expiration Date
49428	Current, Active	GIBNEY, PATRICK J	Registry	03/14/2014	Professional Engineer	02/28/2023

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2805 Apalachee Parkway Tallahassee, Florida 32399-6500

License No.: **LS5799**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper License
Under the provisions of Chapter 472, Florida Statutes

RAYMOND YOUNG
2661 NW 63RD AVE
MARGATE, FL 33063-1721

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

GIBNEY, PATRICK J
525 NE 54TH STREET
BOCA RATON, FL 33431-0000

LICENSE NUMBER: PE49428
EXPIRATION DATE: FEBRUARY 28, 2023
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.
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STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

GIL, JOHNNY
6745 NW 369TH STREET
UNIT B
HIALEAH, FL 33015

LICENSE NUMBER: PE78613
EXPIRATION DATE: FEBRUARY 28, 2023
Always verify licenses online at MyFloridaLicense.com

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Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2805 Apalachee Parkway Tallahassee, Florida 32399-6500

License No.: **LB271**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper Business License
Under the provisions of Chapter 472, Florida Statutes

Craven-Thompson & Assoc., Inc.
3563 NW 53RD ST
FT LAUDERDALE, FL 33309-6311

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2805 Apalachee Parkway Tallahassee, Florida 32399-6500

License No.: **LS4838**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper License
Under the provisions of Chapter 472, Florida Statutes

RICHARD D PRYCE
13961 NW 36TH ST
DAVIE, FL 33325-5906

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

**State of Florida
Department of State**

I certify from the records of this office that Craven, Thompson & Associates, Inc. is a corporation organized under the laws of the State of Florida, filed on January 1, 1962.

The document number of this corporation is 254407.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 10, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Tenth day of January, 2022

Samuel R. McCall
Secretary of State

Tracking Number: 8684540761CC
To authenticate this certificate, visit the following site: enter this number, and then follow the instructions displayed.
<https://services.sos.fl.gov/Filing/CertificateOfStatus/CertificateAuthentication>

FDOT
Florida Department of Transportation

RON DESJARDIN
GOVERNOR

KEVIN J. THORNTON, P.E.
SECRETARY

June 15, 2021

Thomas McDonald, President
Craven, Thompson & Associates, Inc.
3563 NW 53rd Street
Fort Lauderdale, Florida 33309

Dear Mr. McDonald:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

- Group 3 - Highway Design - Roadway
 - 3.1 - Minor Highway Design
 - 3.2 - Major Highway Design
- Group 8 - Survey and Mapping
 - 8.1 - Control Surveying
 - 8.2 - Design, Right of Way & Construction Surveying
 - 8.4 - Right of Way Mapping
- Group 10 - Construction Engineering Inspection
 - 10.1 - Roadway Construction Engineering Inspection
- Group 15 - Landscape Architect

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. Your firm may pursue projects in the referenced work types with fees estimated at less than \$500,000.00. This status shall be valid until June 15, 2022, for contracting purposes.

Should you have any questions, please feel free to contact me by email at carlynn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,
Carlynn Kell
Carlynn Kell
Professional Services
Qualification Administrator

CBK/kaw

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www.fdot.gov

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



HAZEN & SAWYER



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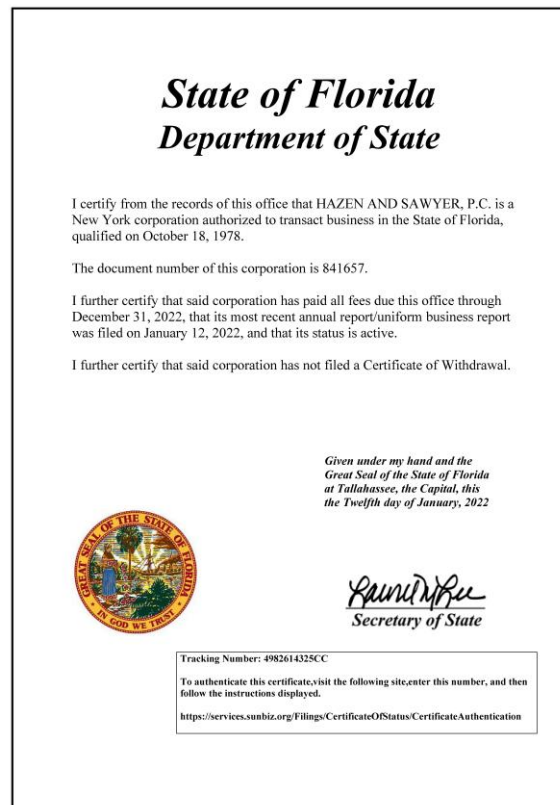
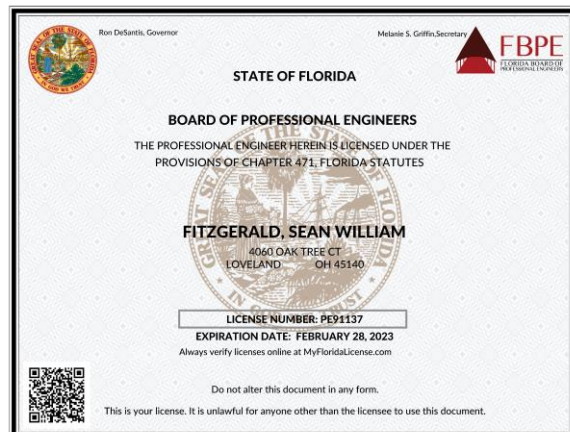
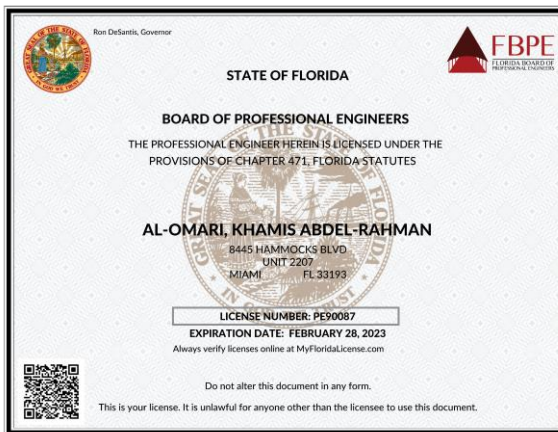
[Find Exam Information](#)

Licensee

Name:	HAZEN AND SAWYER, P.C.	License Number:	2771
Rank:	Registry	License Expiration Date:	
Primary Status:	Current	Original License Date:	11/08/1978

Related License Information

License Number	Status	Related Party	Relationship Type	Relation Effective Date	Rank	Expiration Date
44165	Current, Active	TAYLOR, ROBERT B JR	Registry	04/27/2017	Professional Engineer	02/28/2023



SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



WOOLPERT, INC.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: **LB6777**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper Business License
Under the provisions of Chapter 472, Florida Statutes

WOOLPERT INC
ATTN: TESS CARAWAN 4454 IDEA CENTER BLVD
DAYTON, OH 45430-1500

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: **LS5994**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper License
Under the provisions of Chapter 472, Florida Statutes

JOHN ANGUS CESTNICK
4530 NW 49TH COURT
COCONUT CREEK, FL 33073

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

FDOT
Florida Department of Transportation
605 Sawannee Street
Tallahassee, FL 32399-0450

RON DESANTIS
GOVERNOR

KEVIN J. THIBAUT, P.E.
SECRETARY

July 8, 2021

Thomas Ruschewicz, Geospatial Practice Leader
WOOLPERT, INC.
4454 Idea Center Boulevard
Dayton, Ohio 45430

Dear Mr. Ruschewicz:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

- Group 2 - Project Development and Environmental (PD&E) Studies
- Group 4 - Highway Design - Bridges
 - 4.1.1 - Miscellaneous Structures
 - 4.1.2 - Minor Bridge Design
- Group 8 - Survey and Mapping
 - 8.1 - Control Surveying
 - 8.2 - Design, Right of Way & Construction Surveying
 - 8.3 - Photogrammetric Mapping
 - 8.4 - Right of Way Mapping
- Group 13 - Planning
 - 13.3 - Policy Planning
 - 13.6 - Land Planning/Engineering
- Group 15 - Landscape Architect

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2022, for contracting purposes.

Approved Rates			
Home/ Branch Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses
200.14%	0.560%	Reimbursed	No
			Home Direct Expense 16.92%

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**State of Florida
Department of State**

I certify from the records of this office that WOOLPERT, INC. is an Ohio corporation authorized to transact business in the State of Florida, qualified on September 27, 2004.

The document number of this corporation is F04000005579.

I further certify that said corporation has paid all fees due this office through December 31, 2020, that its most recent annual report/uniform business report was filed on April 23, 2020, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Seventeenth day of February,
2021*

Randy B...
Secretary of State

Tracking Number: 3885789645CU

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.
<https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication>

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,
Carliayn Kell
Carliayn Kell
Professional Services
Qualification Administrator

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SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



SURVEYING AND MAPPING, INC. (SAM)

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: **LB7908**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper Business License
Under the provisions of Chapter 472, Florida Statutes

SAM SURVEYING AND MAPPING, LLC
4801 SOUTHWEST PARKWAY, BLDG. 2, STE 100
AUSTIN, TX 78735

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: **LS6483**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper License
Under the provisions of Chapter 472, Florida Statutes

CHAD MICHAEL THURNER
2844 PABLO AVE
TALLAHASSEE, FL 32308

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: **LS5578**
Expiration Date: February 28, 2023

Professional Surveyor and Mapper License
Under the provisions of Chapter 472, Florida Statutes

ALFREDO A BERMUDEZ
2906 GLEN IVES DR
TALLAHASSEE, FL 32312-4093

Nicole Fried
NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

State of Florida Department of State

I certify from the records of this office that SAM SURVEYING AND MAPPING, LLC is a Texas limited liability company authorized to transact business in the State of Florida, qualified on November 24, 2014.

The document number of this limited liability company is M14000008465.

I further certify that said limited liability company has paid all fees due this office through December 31, 2022, that its most recent annual report was filed on March 2, 2022, and that its status is active.

I further certify that said limited liability company has not filed a Certificate of Withdrawal.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Eighth day of April, 2022*



Frank J. White
Secretary of State

Tracking Number: 5186345053CU

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.

<https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication>

FDOT
Florida Department of Transportation
605 Suwannee Street
Tallahassee, FL 32399-0450

RON DESANTES
GOVERNOR

KEVIN J. THIBAUT, P.E.
SECRETARY

January 11, 2022

Chad Thurner, Office Manager
SAM SURVEYING AND MAPPING, LLC
cross reference SURVEYING AND MAPPING, LLC
2844 Pablo Avenue
Tallahassee, Florida 32308

Dear Mr. Thurner:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

- Group 8 - Survey and Mapping
- 8.1 - Control Surveying
 - 8.2 - Design, Right of Way & Construction Surveying
 - 8.3 - Photogrammetric Mapping
 - 8.4 - Right of Way Mapping

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2022, for contracting purposes.

Approved Rates				
Home/ Branch Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense
192.08%*	1.269%*	Reimbursed	No	29.50%*

*Interim Rates

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell

Carliayn Kell
Professional Services
Qualification Administrator

Safety. Mobility. Innovation
www.fdot.gov

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



MANUEL G. VERA & ASSOCIATES, INC.



State of Florida Department of State

I certify from the records of this office that MANUEL G. VERA & ASSOCIATES, INC. is a corporation organized under the laws of the State of Florida, filed on April 27, 1977.

The document number of this corporation is 534958.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 24, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Twenty-fourth day of January,
2022

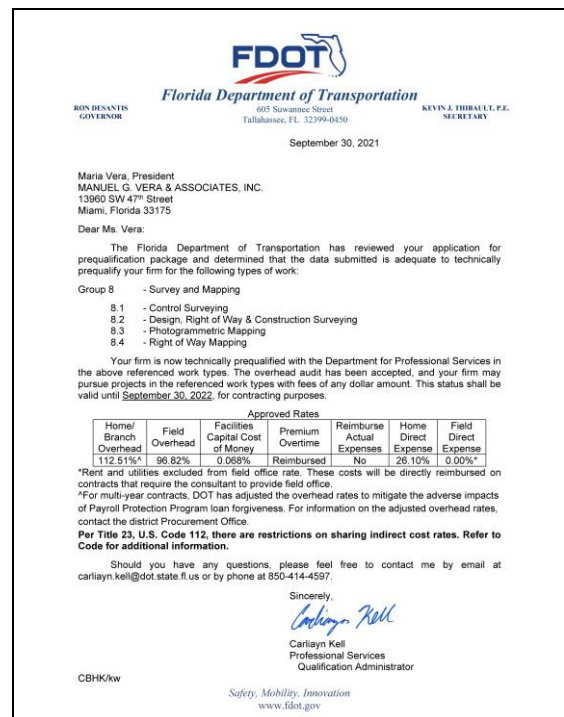
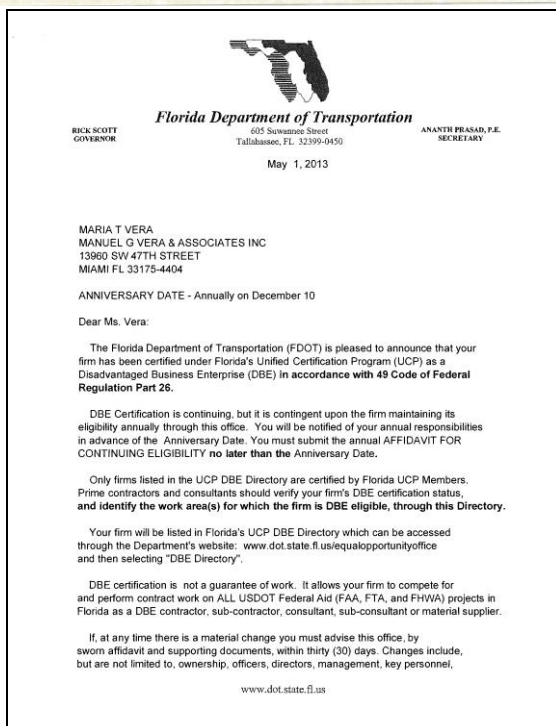


Lauren M. Kell
Secretary of State

Tracking Number: 5708884698CC

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.

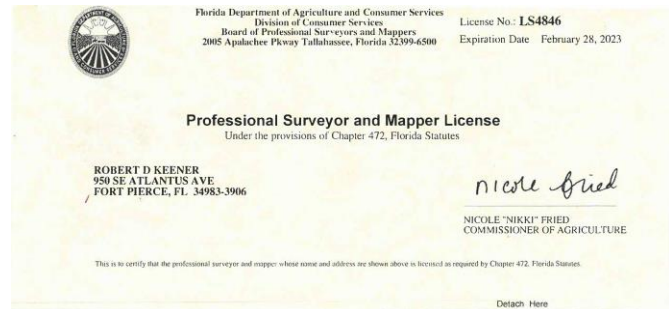
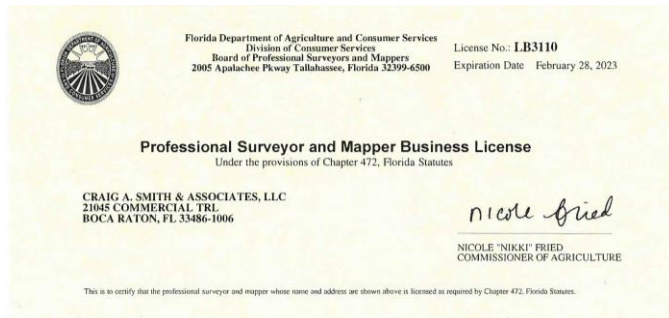
<https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication>



SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



CRAIG A. SMITH & ASSOCIATES



State of Florida Department of State

I certify from the records of this office that CRAIG A. SMITH & ASSOCIATES, LLC is a limited liability company organized under the laws of the State of Florida, filed on May 13, 2021.

The document number of this limited liability company is L21000210726.

I further certify that said limited liability company has paid all fees due this office through December 31, 2021 and that its status is active.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Tenth day of June, 2021*



Randy H. ...
Secretary of State

Tracking Number: 1561931601CU

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.

<https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication>

SECTION 4.2.3: FIRM QUALIFICATIONS AND EXPERIENCE



PROJECT MANAGER (PROJECT DIRECTOR)

Patrick J. Gibney, P.E. is the proposed project manager for the “*Water Consent Order Program Management and Mapping Services*”.

Mr. Gibney graduated from Rutgers, The State University, with a Bachelor of Science Degree in Civil Engineering in 1987. He received his professional engineering license in the State of Florida in 1995. With a total of thirty-four years of experience in the civil engineering field, Mr. Gibney has spent twenty-eight of those years with Craven Thompson & Associates.

As project manager, Mr. Gibney serves as the project lead, client contact, and technical specialist for municipal water distribution and wastewater collection and transmission projects. He provides technical experience and expertise for water and wastewater projects and leads planning, study, design and permitting efforts related to water distribution, reuse water distribution and wastewater collection and transmission infrastructure. He provides leadership, direction, and technical guidance to staff and municipal clients on a variety of water, wastewater related projects.

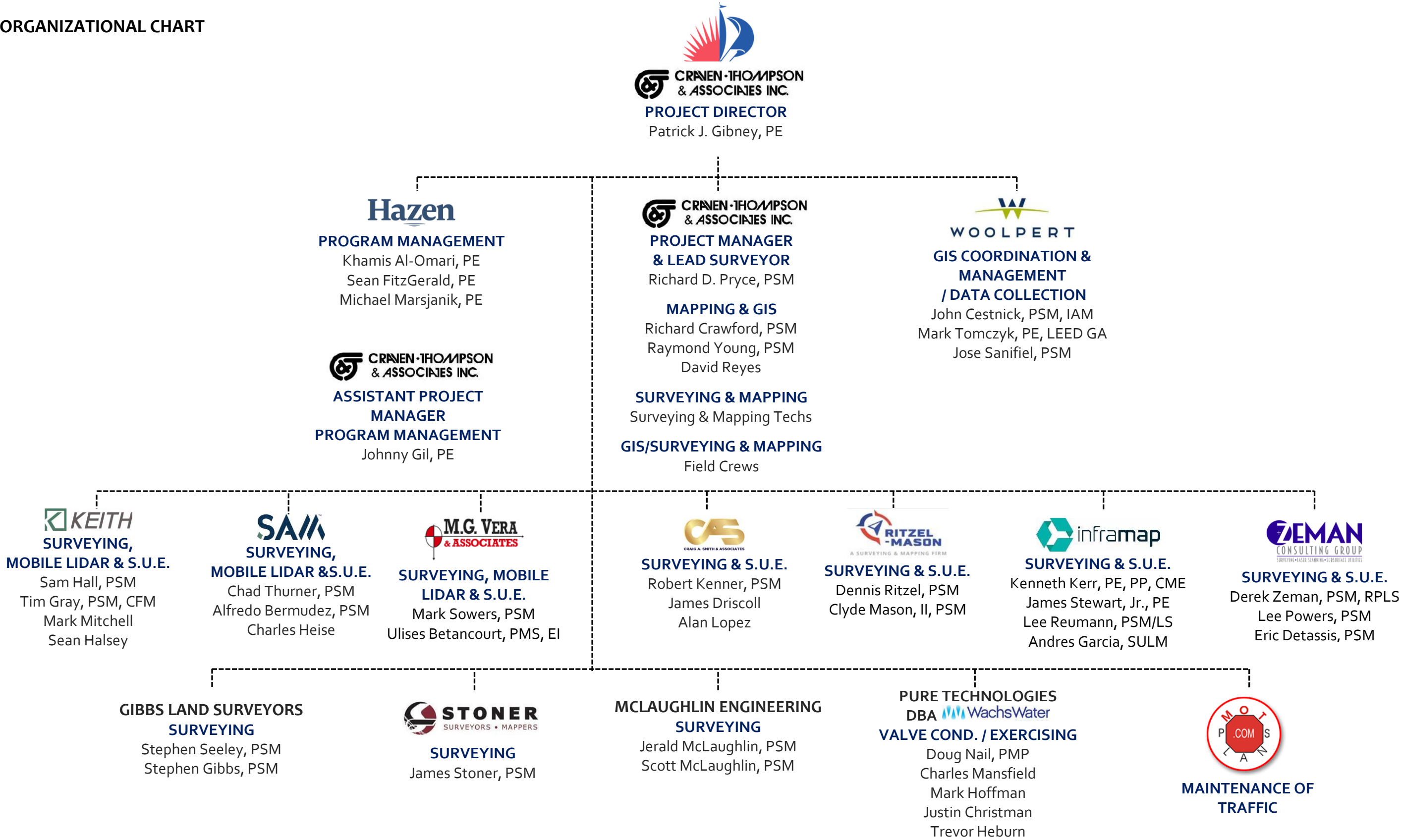
He has designed and/or managed projects involving water, wastewater, and pumping facility rehabilitation in Broward County since 1993. His initial project was the South County Neighborhood Improvement Project for Broward County Water & Wastewater Service which ran from 1993 to 2005. This 1,440-acre project included the design, permitting, bidding and construction consisting of 53 miles of roadway, 140,618 linear feet of watermain, 236,226 linear feet of gravity sanitary sewer, and eleven (11) wastewater pumping stations. Following that project, he was also heavily involved in the design and management of the Central County Neighborhood Improvement Project, the North Central County Neighborhood Improvement Project, and the North County Improvement Project. Combined these projects included hundreds of thousands of feet of watermain, sewer collection main, force main, along with numerous wastewater pump station rehabilitations and new pump station design.

Mr. Gibney has managed and/or directed a large number of water and wastewater system projects for municipalities within Broward County. This includes: Fort Lauderdale, Plantation, Oakland Park, Davie, Hollywood, Miramar, and Hallandale Beach. Craven Thompson currently has continuing services CCNA contracts for water and wastewater for each of these Broward County municipalities. Recently, Mr. Gibney has managed projects such as: Eastside Infrastructure improvements for the Town of Davie; Hollywood Watermain Replacement Program - City Projects 15-5129 and 12-5517, Driftwood Septic to Sewer Conversion Phases 1 & 2; Master Lift Station W-14 and Lift Stations A-6, & E-2 Rehabilitation for Hollywood; and Master Pump Station 8 Rehabilitation for Hallandale Beach. He was the project manager for the Fort Lauderdale *Pump Station A-13 and Sewer Re-Direction South of Federal Highway Project*. Mr. Gibney also acted as project director for the Fort Lauderdale *South Middle River Force Main Crossing Design-Build Project*, as well as the Fort Lauderdale *54” Diameter Redundant Force Main Bypass Line (Zones 4B & 4C) Design-Build Project*.

Section 4.2.4: Qualifications of the Project Team

Section 4.2.4

ORGANIZATIONAL CHART



SECTION 4.2.4: QUALIFICATIONS OF THE PROJECT TEAM



PATRICK GIBNEY, P.E.
PROJECT DIRECTOR

Mr. Gibney has over thirty-four years of experience providing project management, design and construction management services for public civil engineering projects. These projects include infrastructure improvements for a multitude of infrastructure rehabilitation projects. This includes design and CEI services for water distribution systems, sanitary sewer collection & transmission systems, lift Stations, pavement design, storm water management systems, drainage systems, preparation of contract documents and specifications and construction inspections.

Relevant Experience:

East Las Olas Boulevard Watermain and Forcemain Design Criteria Package | Fort Lauderdale, Florida | Project Manager. The City of Fort Lauderdale retained Craven Thompson & Associates and Hazen and Sawyer to develop the design criteria package documents and obtain all long-lead permits for crossing of the ICW. This team's permitting expertise was critical to meeting the City's Deadline. The purpose of this \$3.1 Million project, completed in December 2016, was to deepen a critical 20-inch water main crossing of the ICW along with adding a new 16-inch sewage force main to enhance system reliability. The impetus for this project was a Florida Inland Navigation District (FIND) plan to deepen the Intracoastal Waterway navigation channel from 10 to 17 feet below the water surface to stimulate economic development of the region's marine industry.

Installation of New Redundant Bypass Line (Zone 4B & 4C) – 54" FM | Fort Lauderdale, Florida | Project Director - The project involved the installation of 54" nominal OD HDPE Force Main by Horizontal Directional Drill (HDD), with sections of open cut trench installation of 16" HDPE Force Main. The total length of Horizontal Directional Drill (HDD) 54" OD HDPE Force Main is 3,223 LF in length which was proposed to minimize the disturbance to the community and limit the amount of pavement restoration, with an additional 653 LF of 16" HDPE Force Main installed by open cut trench.

South Middle River Force Main Crossing – 16" Redundant Pipe | Fort Lauderdale, Florida | Project Director - The project involved the installation of 16" nominal OD HDPE Force Main under the South Middle River Waterway, with sections of open cut trench installation of 16" PVC Force Main. The total length of subaqueous crossing of 16" HDPE Force Main is 1,092 LF in length, with an additional 832 LF of 16" PVC Force Main installed by open cut trench.

Pump Station A-13 & Sewer Redirection East of Federal Highway | Fort Lauderdale, Florida | Project Manager - This project is for the construction of Lift Station A-13, located at the southeast corner of Southeast 2nd Court and Southeast 8th Avenue. The project scope included the construction of an 18-inch diameter gravity sanitary sewer system and the connection to an existing active sanitary sewer manhole located at the intersection of Federal Highway and Broward Boulevard to the new lift station.



CRAVEN-THOMPSON & ASSOCIATES INC.

Firm:

**Craven Thompson &
Associates, Inc.**

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

Education

Rutgers, The State University,
Bachelor of Science
in Civil Engineering
(1987)

Years of Experience

Total: 34; With Firm: 28

Licenses/Certifications

State of Florida
Professional Civil Engineer
Florida No. 49428 (1995)

FDOT Pre-Qualified
Roadway Construction
Engineering Inspection

SECTION 4.2.4: FIRM QUALIFICATIONS AND EXPERIENCE



RICHARD D. PRYCE, P.S.M.,
PROJECT MANAGER DATA COLLECTION & MAPPING

Mr. Pryce has over forty-four years of experience surveying in South Florida. He has specialized in all aspects of the land surveying & mapping profession and has also specialized in developing GIS/Survey applications using ESRI ArcGIS software since 1990.

Relevant Experience:



Firm:

**Craven Thompson &
Associates, Inc.**

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

education

Broward Community College,
Associate of Science in
Criminal Justice (1978)

years of experience

Total: 44; With Firm: 16

licenses/certifications

Professional Surveyor
and Mapper: LS4038 (1983)

publications

Co-author POB Magazine -
"22,000 Acres and Counting"
November 1998

Co-author POB Magazine -
"The CAD Resolution"
September 1999

affiliations

Past Director - Broward County
Chapter of Florida Surveying &
Mapping Society
State & County Chapters, Florida
Surveying & Mapping Society
American Congress on
Surveying and Mapping
National Society of
Professional Surveyors
American Society of
Photogrammetry and
Remote Sensing

North Miami Beach Sewer & Water GIS Project | North Miami Beach, Florida - Project Manager - This project for North Miami Beach Utility Department was undertaken to create an ArcGIS geodatabase of water and sanitary sewer system for the entire services area. The goal of this project was to provide Survey/GIS grade data without actual surveying the entire water & sanitary sewer system.

Stormwater GIS/Data Collection Project | North Miami Beach, Florida | Principal Survey/GIS Manager - The City is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The Craven Thompson data was collected by a Unique ID. Craven Thompson provided the city with a copy of the updated geodatabase with all the proposed data fields to be collected for review. The GIS data collected consisted of: Structure type (junction, inlet, control structure, drainage well); Pipes: Culvert, Outfalls, Headwalls & Seawalls.

Fort Lauderdale Stormwater Master Plan GIS & Survey | City of Fort Lauderdale, Florida | Project Manager - Performed surveying, and an As-built/Inventory 5,400 Stormwater Features for GIS City-Wide Stormwater Model. The city was flown with high density aerial LiDAR to a vertical accuracy of 0.15 feet across the entire City. From the Lidar we created a 2-foot grid Digital Elevation Model of the ground for modeling drainage flow. This required a GPS Control Network, and 309 ground control for the flight, performed over 5,000 verification shots on hard surfaces at major roadways across the city. The second part of this survey was to collect and evaluate 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research As-built records of the city in the Stormwater system and provide the data in ArcGIS Geodatabase conforming to their GIS Model Schema.

Fort Lauderdale Sanitary Sewer System GIS & Surveying | Fort Lauderdale, Florida | Project Manager - Craven Thompson established Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory of Manholes, pump Stations, meters, valves, air valves and 80 miles of force mains. During Sewer Mapping Phase I, the Benchmarks and GPS Control monuments were established for each of the 52 Data Collection Zones (DCZ). The benchmarks and monuments were utilized with a GPS base station during the feature data acquisition phase. Phase II included multiple feature data acquisitions for the City's GIS System and for certain areas to be thoroughly modeled. The data acquisition features collected as part of this Phase included 5,908 manholes, 190 Pump Stations, 15 Meters, and 80 miles of pressure pipes with 752 valves and 285 Air release valves.

RFQ # 12665-1026

CITY OF FORT LAUDERDALE

WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES

SECTION 4.2.4: FIRM QUALIFICATIONS AND EXPERIENCE



RICHARD G. CRAWFORD, JR., P.S.M.
LAND SURVEYOR / FIELD CREW COORDINATOR

Mr. Crawford has over thirty-six years of experience within the surveying industry. During this time, his experience has grown to include all types of surveys. Richard is well trained and proficient in the processing of survey data collection from a variety of data collection devices, such as GPS, Digital Leveling, and Conventional Total Stations.

Relevant Experience:

Sanitary Sewer Mapping – Control Surveying | Fort Lauderdale | Principal Survey Project Manager - Responsible for establishing Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory 5,917 Sanitary Manholes, 190 pump Stations, 15 meters, and 80 miles of force mains and their associated valves.

Citywide Benchmarks | City of Pompano Beach, Florida | Principal Survey Project Manager – Responsible for establishing Primary and Secondary Vertical First Order Control to establish new city benchmarks to support a Storm Drainage Study.

Florida Department of Transportation (FDOT), District 4 and District 6, Districtwide Miscellaneous Services Contract-South Florida – Project Surveyor. Supervised a wide variety of land surveying assignments throughout Southeast Florida region as a Project Surveyor in responsible charge. Utilized GNSS, and conventional land surveying techniques to perform digital terrain modeling, subsurface utility locations (SUE), boundary determinations, sewage infrastructure analysis, bridge details, control surveys, and right-of-way establishment.

City of Fort Lauderdale Modeling and Design Implementation of Storm Water Master Plan | Fort Lauderdale, Florida | Project Surveyor. Responsible for directing survey data collection, GIS analysis, and assisting others team members. Provided oversight for field data acquisition of storm water infrastructure attributes needed to populate an existing GIS Database.

Dania Pointe | Dania Beach, Florida | Project Surveyor
Construction of 101+ acres of infrastructure, roadways and buildings, retail and residential, as-builts of the same. Project cost - \$1 Billion.

Broward County UAZ 110/111 & 113 Water Sewer Improvements 113B | Lauderdale - Project Surveyor/Field Coordinator. Mapping, Field Coordination, Survey Data Processing. Responsible for establishing Primary and Secondary Vertical Control for Drone Mapping including flying, and processing drone data.



CRAVEN THOMPSON & ASSOCIATES INC.

Firm:

**Craven Thompson &
Associates, Inc.**

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

education

Palm Beach Community College,
Associates of Science in Land
Surveying (1994)
Broward College, Associate of
Arts in Architecture (1986)

Years of experience

Total: 36

Licenses/certifications

Professional Surveyor
and Mapper: LS5371 (1994)

FAA Remote Pilot with a
UAS Rating Certificate
Number 3911523 (2016)

Computer Skills

AutoCAD, MicroStation, Star
Net, Civil 3D, Carlson Survey

Affiliations

Florida Surveying & Mapping
Society - Broward Chapter

SECTION 4.2.4: FIRM QUALIFICATIONS AND EXPERIENCE



RAYMOND YOUNG, P.S.M.
LAND SURVEYOR

Mr. Young has thirty-nine years of experience surveying in South Florida. He has performed both field and office work on a variety of projects both large and small. He is experienced in all aspects of surveying including boundary, topographic, construction layout, ALTA mortgage, as-built, control and location surveys. He has prepared numerous plats and has been involved in the recordation of these plats.

Related Work Experience (Partial Listing):



Firm:

**Craven Thompson &
Associates, Inc.**

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

years of experience

Total: 39; With Firm: 29

licenses/certifications

Professional Surveyor
and Mapper: LS5799

affiliations

Florida Society of
Professional Surveyors and
Mappers

North Miami Beach Water & Sewer Service Area GIS & Mapping | North Miami Beach, Florida | Surveyor - Project surveyor/GIS. Data Collection and G.I.S. Specialist - The purpose of the 25,600 Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, ESRI Geographic Information System (GIS) format. The Project included the entire North Miami Beach Utility service area.

Fort Lauderdale Sanitary Sewer System GIS & Surveying | Fort Lauderdale, Florida | Surveyor - Project surveyor/GIS. Data Collection and G.I.S. Specialist - Craven Thompson performed surveying, and an As-built/Inventory 5,400 Stormwater Features for GIS City-Wide Stormwater Model. The survey limits of this project are described as the entire City limits of Fort Lauderdale. The city was flown with high density aerial LiDAR to a vertical accuracy of 0.15 feet across the entire City. From the Lidar we created a 2-foot grid Digital Elevation Model of the ground for modeling drainage flow. This required a GPS Control Network, and 309 ground control for the flight, performed over 5,000 verification shots on hard surfaces at major roadways across the city. The second part of this survey was to collect and evaluate 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research Asbuilt records of the city in the Stormwater system and provide the data to the City in ArcGIS Geodatabase conforming to their GIS Model Schema.

Seminole Hollywood Reservation Stormwater Data Collection/GIS | Hollywood, Florida | | North Miami Beach, Florida - Senior Survey /GIS Technician - The Hollywood Seminole Reservation is generally bounded by Stirling Road on the north and by Sheridan Street on the south and includes the Hard Rock Hotel and Casino which is located north of Stirling Road. Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation. Craven Thompson acquired accurate horizontal and vertical information on every stormwater/drainage feature on the Tribe's Hollywood Reservation. We reviewed existing storm sewer surveys and as-builts that could assist with GIS location and with this information our survey crew measured each structure to get accurate horizontal and vertical information for the Tribe's GIS system. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, and structure condition were obtained in the field.

SECTION 4.2.4: FIRM QUALIFICATIONS AND EXPERIENCE



DAVID REYES, SURVEY & G.I.S. TECHNICIAN
LAND SURVEYING, G.I.S. DATA COLLECTION & MAPPING

Mr. Reyes has significant surveying and mapping experience in Florida. He has extensive private and public sector project experience including design, construction engineering inspection (CEI), construction, global positioning systems (GPS), geographic information systems (GIS), right-of-way control.

Relevant Experience:



Firm:

**Craven Thompson &
Associates, Inc.**

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

Registrations / Certifications

Certified Survey Technician Level
III, Florida, 2003
FDOT Maintenance
of Traffic, Florida

Continuing Education

FDOT Intermediate Work Zone
Traffic Control Refresher (2005)

Years of Experience

Total: 30; With Firm: 6

FDOT Work Type Codes:

- 8.1 - Control Surveying
- 8.2 - Design, Right-of-Way
Construction Survey
- 8.4 - Right-of-Way Surveying

Affiliations

Member, CAICE Users Group
Member, Florida GPS
Users Group
Member, Florida Local
Users Group
MicroStation Community
Secretary, Florida Surveying &
Mapping Society,
Broward County Chapter 2004

Fort Lauderdale Sanitary Sewer System GIS & Surveying | Fort Lauderdale, Florida - Craven Thompson established Primary and Secondary Vertical Control with over 3,000 new benchmarks for Sanitary Sewer Mapping of the City, including As-built/Inventory of Manholes, pump Stations, meters, valves, air valves and 80 miles of force mains. During Sewer Mapping Phase I, the Benchmarks and GPS Control monuments were established for each of the 52 Data Collection Zones (DCZ). The benchmarks and monuments were utilized with a GPS base station during the feature data acquisition phase. Phase II included multiple feature data acquisitions for the City's GIS System and for certain areas to be thoroughly modeled. The data acquisition features collected as part of this phase included 5,908 manholes, 190 Pump Stations, 15 Meters, and 80 miles of pressure pipes with 752 valves and 285 Air release valves

Seminole Hollywood Reservation Stormwater Data Collection/GIS | Hollywood, Florida | Senior Survey /GIS Technician - The Hollywood Seminole Reservation is generally bounded by Stirling Road on the north and by Sheridan Street on the south and includes the Hard Rock Hotel and Casino which is located north of Stirling Road. The east and west boundaries are formed by existing residential neighborhoods in the City of Hollywood. Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation. Craven Thompson acquired accurate horizontal and vertical information on every stormwater/drainage feature on the Tribe's Hollywood Reservation. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, and structure condition were obtained in the field.

Fort Lauderdale Stormwater Master Plan GIS & Survey | City of Fort Lauderdale, Florida - Performed surveying, and an As-built/Inventory 5,400 Stormwater Features for GIS City-Wide Stormwater Model. The city was flown with high density aerial LiDAR to a vertical accuracy of 0.15 feet across the entire City. From the Lidar we created a 2-foot grid Digital Elevation Model of the ground for modeling drainage flow. This required a GPS Control Network, and 309 ground control for the flight, performed over 5,000 verification shots on hard surfaces at major roadways across the city. The second part of this survey was to collect and evaluate 5,400 storm structures with Rims, Inverts, Pipe Size, material, and research As-built records of the city in the Stormwater system and provide the data to the City in ArcGIS Geodatabase conforming to their GIS Model Schema.

SECTION 4.2.4: FIRM QUALIFICATIONS AND EXPERIENCE



JOHNNY GIL, P.E.
ASSISTANT PROGRAM MANAGER

Mr. Gil's experience includes program management, and design of paving, grading & drainage, water & sanitary sewer, permitting, project coordination, estimating and drafting.

Relevant Experience:

City of Fort Lauderdale Wastewater Consent Order Program (OGC No 16-1487) – Program Management Services (2019-Present) | Fort Lauderdale | Senior Engineer
Responsibilities include periodically gathering project status information, producing monthly progress reports, and Semi-Annual Reports, maintaining and consistently updating the overall Consent Order Program Master Schedule, recording and archiving of project completion and certification documentation, coordinating presentation graphics, assembling program status updates, drafting project notifications for project completions and Milestone achievements to the Florida Department of Environmental Protection (FDEP).

- Responsible for gathering, compiling and overall production of the Consent Order Projects Monthly Progress Report and Semi-Annual Reports. The projects reported consists of (15) Sewer Force Main projects, (5) Pump Station projects, (6) Infiltration & Inflow projects and (2) Wastewater Treatment Plant Generator projects, among other City-wide asset management plans, infrastructure mapping and Utility Condition Assessments programs and reports.
- Responsibilities also include maintaining and tracking updates of the Master Program Schedule, which tracks all the Consent Order Projects and required Milestones. Tracking and tabulating project percent complete for each individual project. Planning and coordinating the completion of the Consent Order requirements with the City and Consultants to meet the Program Milestones. Development and updating of program and project costs reports requested by FDEP as per the Amended Consent Order.

Project Delivery Plan - Bid Package 10 | City of Oakland Park | Project Engineer - Responsible for the layout, replacement and upgrade design of approximately 10,000 LF of water main and 2,000 LF of force main throughout the City of Oakland Park. Design required coordination with existing utilities and permitting with City, County and State Agencies.

City of Miami Gardens, Vista Verde Drainage Design | Miami Gardens | Project Engineer - Responsible for creating a drainage model of the Vista Verde Neighborhood and preparing a complete set of drainage plans and cost estimate. Design included pipe sizing, grading and coordination with concurrent Dade County water main installation.

Floranada Road Roundabout and Traffic Calming Improvements | City of Oakland Park | Project Engineer - Assisted project manager in preparation of contract documents, including revisions to plans and quantity take-offs.



CRAVEN THOMPSON & ASSOCIATES INC.

Firm:

Craven Thompson & Associates, Inc.

3563 NW 53rd Street
Fort Lauderdale, Florida 33309

Education

Georgia Institute of Technology, Atlanta, Georgia,
Masters of Science, Civil Engineering - Structures (2010)

Florida International University,
Miami, Florida Bachelor of Science in Civil Engineering (2008)

Years of Experience

Total: 12; With Firm: 7

Licenses/Certifications

State of Florida
Professional Civil Engineer
Florida No. 78613 (2015)

Technical Skills

AutoCAD Civil 3D,
Microstation, GTSTRUDL,
STAAD, ETABS
MathCAD, Matlab, Primavera,
Project Planner, Microsoft
PowerPoint, Advanced Excel
Programming, Word, ICPR3,
Cascade

RFQ # 12665-1026

CITY OF FORT LAUDERDALE

WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES



Khamis Al-Omari, PE

Program Manager

Mr. Al-Omari has over 33 years of experience in wastewater and water engineering and project management. He currently serves as a Project Manager on the City of Ft. Lauderdale Sewer Design and Implementation Consent Order Program, responsible for program budget and schedule controls, risk management and reporting. He also served as the Program Manager managing contracts, budgets, and schedules for the \$165 million Zarqa Water and Wastewater Networks Projects in Jordan.

Education

MS, University of Cincinnati, 1988
BS, Ohio University, 1984

Certification/License

Professional Engineer: FL, MI, OH

Master Citizen Planner, Michigan State University Extension, 2007

Areas of Expertise

- Construction management
- Program management
- Constructability review
- Combined sewer systems
- Wastewater treatment plants
- Water and sewer systems
- Pumping stations

Experience

- 33 total years
- 23 years with Hazen

Professional Activities

Water Environment Federation

Construction Management Association of America

Project Awards

Conner Creek CSO Control Facility, Detroit, MI:

- 2007 Construction Management Association of America (CMAA) Project Achievement Award for Infrastructure Project with Constructed Value Greater than \$100 Million
- 2007 Honorable Conceptor Award for Engineering from the American Council of Engineering Companies (ACEC) of Michigan and Michigan Society of Professional Engineers (MSPE)

City of Fort Lauderdale Sewer Design and Implementation Consent Order Program, FL

Mr. Al-Omari currently serves as a Project Manager on the City of Fort Lauderdale's \$181 million Consent Order Program. He is responsible for developing and monitoring the Master Program Schedule and Cost Model; planning and monitoring the projects defined in the Consent Order by defining their scope, deciding their project delivery method, and validating their schedule and project budget; risk management including risk identification, impact analysis, mitigation, and monitoring; quality assurance; and preparing monthly and semi-annual progress reports.

Zarqa Water and Wastewater Program Management and Construction Supervision Project, Jordan

Mr. Al-Omari served as the Program Manager for the \$163 Million Jordan Water and Wastewater Program which included five wastewater and six water projects involving construction of approximately 500 miles of water supply networks, 200 miles of wastewater collection systems, and a new regional administration building for the Water Authority of Jordan. He also served as the Project Manager for the detailed design of the \$103-million Water Network Restructuring and Rehabilitation Project (Water Network Project). The scope involved condition assessment of the existing water network, planning and design of the new water supply network (approximately 500 miles), rehabilitation of multiple water storage reservoirs, new booster station, and new pump station and reservoir.



Sean Fitzgerald, PE

Vice President – Conveyance Practice Leader

Mr. Fitzgerald has over 30 years of experience in conveyance planning, design and asset management. He serves as Hazen and Sawyer's Corporate Conveyance Practice Leader and has helped develop and implement numerous conveyance related programs across the Country utilizing industry best practices for program controls as well as using innovative tools used to manage, track, and visualize work progress. Many of these programs include detailed asset mapping, condition assessment, and rehabilitation and replacement planning and budgeting.

Education

MSEnvE, University of Cincinnati, 1994

BSCE, University of Cincinnati, 1992

Certification/License

Professional Engineer: FL, OH, KY, NY, TX, Washington DC, MN

Areas of Expertise

- GIS-based analyses
- Sewer and water master planning
- Sewer and force main assessment and rehabilitation
- Hydraulic analysis
- Pipe and pump station design

Experience

- 32 total years
- 15 years with Hazen

Professional Activities

Water Environment Federation

- Collection System Committee

Ohio Water Environment Association

- Collection System Committee

American Water Works Association

Kentucky-Tennessee Water Environment Association

Technical Publications

Fitzgerald, Sean. Manuals of Practice, including FD-6 Existing Sewer Evaluation and Rehabilitation (2020) and FD-17 Prevention and Control of Sewer System Overflows (2012).

City of Clearwater Wastewater Collection System Program Management, Clearwater, Florida

Technical and QA/QC lead for the Clearwater WCS PM project. The program includes overseeing all aspects of the collection system program including program controls, schedules, field inspections, flow monitoring, data management, reporting, CIP planning, design and construction management.

Sarasota County AM CMOM Program Development and

Implementation, Sarasota County Public Utilities, Florida Technical Lead for the development and implementation of the Sarasota County asset management and CMOM programs. Program tasks include the development and implementation of the CSAMP that incorporates all aspects of the collection and transmission system. Supported development of as-is and to-be business process mapping to support the program and development of the lift station risk framework, asset inventory process, and maintenance programs. Also supported evaluation of the CMMS software to consider switching to a more GIS-focused program.

City of Fort Lauderdale Cityworks Implementation, Fort Lauderdale, FL - Senior Project Manager on behalf of the City of Ft. Lauderdale for the implementation of Cityworks CMMS software for the Public Works Department and includes all assets for the wastewater, stormwater, and drinking water divisions. Providing technical assistance with development of workflows, business processes, and geodatabase design for implementation for linear and vertical assets.



Education

BS, Clarkson University, Civil/
Environmental Engineering, 1992

Certification/License

Professional Engineer: FL

Areas of Expertise

- Program Management
- SSES, I/I Study
- CMOM

Experience

- 29 total years
- 8 years with Hazen

Technical Publications

Marsjanik, M.V., C. Espinosa, and W. Qadri. 2008. Managing a Consent Decree, Baltimore City Consent Decree Program Management. Presented at the Virginia Water Environment Association Spring Conference. Richmond, Virginia. 10 April.

Marsjanik, M.V., W. Frankenfield. 2008. Baltimore County's Sewer Collection System Rehabilitation Program. Presented at the Trenchless Road Show. Ellicott City, Maryland. 12 November.

Marsjanik, M.V., C. Espinosa, A. Lambert, W. Qadri. Managing a Consent Decree – How Baltimore's Unique Approach has led to Innovation, Efficiency, and Success. Published in the July/August 2008 Edition of Underground Infrastructure Management.

Michael Marsjanik, PE

Program Administration and Controls

As Lead for Program Administration and Controls, Mike will oversee development of the Project Management Plan, selection and tailoring of tools and controls to be used, and management of cost and schedule throughout the project; he will ensure the project is delivered successfully, on schedule and within budget.

Mike has a proven track record serving as Program Manager on multiple large-scale water and wastewater infrastructure programs.

Asset Management/Program, Jefferson County, AL

Mike served as an advisor to the team responsible for initiating overall program controls and performance tracking. He oversaw development and implementation of a master schedule encompassing over 100 projects; developed cash flow planning procedures; created monthly performance tracking reports; and assisted in the development of a comprehensive Construction Management Plan.

\$300M CIP Program, City of Baltimore, MD

Program Manager. Responsible for \$5.3M consulting contract for PM/CM services. Client Point of Contact. Services have included 1) creation, development, maintenance, training, and turn-over of a comprehensive Primavera P3 project tracking system for all CIP projects for DOT, W/Ww, Solid Waste, and General Services Departments (PROJECTSTAT), 2) development of Standard Operating Procedures for design/construction project life cycle, 3) Project Manager training for 50 City Project Managers for pre-design, design and construction, 4) strategic planning and programming for fiscal year project funding, 5) facilitation and report development for bi-weekly meetings between the DOT, DPW and Mayor's Office (ProjectStat), 6) evaluation and analysis of CIP processes and procedures, and 7) staffing support.

\$1B Wet Weather Sewer Consent Decree, City of Baltimore, MD

Mike was responsible for overall management for the Consent Decree program, including: development of the document management system utilizing Primavera Expedition; development of the master schedule; overseeing \$90 M of study-phase consulting work; coordinating consultants; development and oversight of a highly successful program communication protocol; development of preventive and routine maintenance programs.



John Cestnick, PSM, IAM

Program Director

As a Program Director within Woolpert's Technology Services Market, John Cestnick leads a team of IT experts in designing and implementing information management solutions to meet clients' diverse needs.

John's more than 20 years of progressive experience encompasses GIS utility mapping and asset inventories; GIS conversions to Esri geodatabases; photogrammetric, aerial, and hydrographic mapping; topographic, boundary, and control surveys; laser scanning; and subsurface utility engineering (SUE) for municipal, utility, and airport clients. As a testament to his experience, John has been intimately involved with nearly every GIS implementation and inventory project that Woolpert has completed in South Florida.

Project Experience

Cityworks Asset Management System Implementation, City of Fort Lauderdale—Fort Lauderdale, Florida. Project Manager responsible for project oversight and contract compliance. In 2019 the City of Fort Lauderdale selected Woolpert to implement a new Cityworks AMS GIS-centric asset management system for the water, wastewater, and stormwater divisions. Also included within the project was system integrations between Cityworks and their Cayenta meter billing system, and the QAlert 311 system.

Asset Management Implementation GIS/GPS Utility Mapping and Data Conversion—City of Fort Lauderdale, Florida. Phase Manager for all surveying and inventory services. Between 2000 and 2002, Woolpert assisted the Public Services Department in developing and implementing a state-of-the-art asset management system to provide accurate, current information on its utility infrastructure. After initial planning, Woolpert provided a GPS inventory of water, sewer, and stormwater utility structures, as well as an inventory of light poles, to build GIS layers in geodatabase format. Woolpert then integrated the GIS with the City's Hansen CMMS, and developed specifications and applications for maintaining, querying, and viewing the asset data in a web environment.

Onsite GIS Support Services, WASD—Miami, Florida. Project Manager responsible for project oversight and contract compliance. Between January 2013 and November 2016, Woolpert had as many as 40 GIS Technicians onsite at WASD providing GIS conversion services to assist the County in updating their water and sewer utility GIS. Onsite staff used a custom application called *GIS Atlas Maintenance System* (GAMS2) to enter new data; used GAMS2 to research and correct reported GIS data errors; used Esri GIS tools to validate and modify GIS layers; interpreted water and sewer as-builts; provided research using various WASD systems; and QA/QC various utility attribute and feature information.

GIS/GPS Water and Sewer Utility Survey, WASD—Miami, Florida. Project Manager responsible for all surveying activities. Beginning with a nine square-mile pilot area and continued with full conversion of the 414 square-mile service area, provided services to build a GIS that support both water and sewer distribution networks by locating surface utility features. Woolpert worked extensively with a Trimble Navigation software programmer in co-developing a pen based RTK data collection software. This allowed for the quick and efficient data collection of over 180,000 water and sewer utility features to accuracies of 3.5 centimeters. After the successful completion and client acceptance of the pilot area, Mr. Cestnick managed the full production of all field aspects of the project, which at times included eight field crews.

Utility GIS/GPS Utility Mapping and Data Conversion—City of Deerfield Beach, Florida. Project Manager responsible for the successful completion of the project. Woolpert was contracted to provide a citywide inventory of their water, sewer, and stormwater utility systems. Following the field data collection, Woolpert used existing as-built and other utility source documentation to build utility networks using a refined version of the Esri Local Government Information Model. Contracted task items included a project management plan; project communications website; field and GIS procedures manuals; geodatabase design documentation; personal geodatabase deliverables; project training; and RTD GPS utility mapping for the entire city.



Professional Data

Years of Experience

26 years

Education

Bachelor of Science, Surveying Engineering, University of New Brunswick

Certificate, Technology Management & Entrepreneurship, University of New Brunswick

Certificate, Survey Technologist, College of Geographic Sciences

Professional Registration

Professional Surveyor and Mapper, Florida, LS5994

Certified Asset Management, National

Section 4.2.5: Approach to Scope of Work

Section 4.2.5

SECTION 4.2.5: APPROACH TO SCOPE OF WORK



UNDERSTANDING OF CITY'S GOALS, NEEDS, OBJECTIVES

Over the past few years, the City of Fort Lauderdale's water system has been subject to watermain breaks that have warranted city-wide boil water orders. During these events, the City could not quickly identify and close the valves necessary to isolate the breaks to small well-defined locations. As a result, the City entered into Consent Order Number 19-1637 with the Florida Department of Environmental Protection (FDEP) on July 24, 2020 to improve the potable water system.

The City's water infrastructure consists of approximately 750 miles of source and distribution water mains, 19,000 valves, 6,200 fire hydrants, 250 air release valves, and 62,000 water meters and service lines. The City is looking to contract with an engineering/surveying consulting team to manage the Water Consent Order Program Report to FDEP; perform data collection, surveying, and georeferenced mapping of the water infrastructure; and assist with the water line valves exercise program. Other tasks required to comply with the Consent Order may be added to the overall scope.

For the program management task, the consultant will prepare and maintain, together with City staff, a Program Management Plan which establishes communication protocols and data collection, and process standards that will ensure the conditions set forth by the FDEP Consent Agreement are met. This includes developing documents, memorandums and progress reports as required for submission to FDEP to meet Consent Agreement mandates and deadlines, and to stay in compliance with FDEP regulations. Other program management tasks to be provided by the consultant includes assistance with the water valve exercising program through planning the field work, providing and updating field schedules, and preparation of field activity reports. The selected consultant is to provide supplemental resources for valve exercising if necessary. Xylem will provide these services. We acknowledge that the City is currently in the process of exercising the valves per the Consent Order requirements. The remaining items to be completed in the valve exercising program include: exercise 20% of the water distribution system valves in Year 2; preparation of an annual report of water distribution system valves exercised in Year 2; exercise 20% of the water distribution system valves in Year 3; exercise 20% of the water distribution system valves in Year 4; and exercise 20% of the water distribution system valves in Year 5.

Under program management, the consultant will review and validate maintenance records and prepare an annual report showing that the water line valves were exercised as required by the Consent Order. They will provide a physical condition assessment of all water valves and provide recommendations based on the findings of the assessment. The selected consultant will also prepare and submit reporting to FDEP in a timely fashion.

MANAGEMENT & COORDINATION

Craven Thompson's Project Director (overall Project Manager), Mr. Patrick Gibney, P.E., will be responsible for all aspects of this contract. He has extensive experience designing and managing watermain projects over the past twenty-nine (29) years. He has worked with the City of Fort Lauderdale staff on a continuing basis on various capital improvement projects for the past ten years. Mr. Gibney will be the main contact between the Program Manager, Mapping Project Manager, City, Hazen and Sawyer, and Woolpert for all aspects of this project.

Under Mr. Gibney's directions, the Mapping Project Manager, Mr. Richard Pryce, PSM with Craven Thompson, will oversee, manage, and coordinate the field efforts of the Craven Thompson survey crews and all subconsultant's field survey crews. He was the survey project manager for the data collection and mapping for the City's Sewer Design and Implementation Consent Order.

SECTION 4.2.5: APPROACH TO SCOPE OF WORK



Mr. Khamis Al-Omari, P.E., with Hazen and Sawyer, will serve as the Program Manager for this contract. Mr. Al-Omari currently serves as the Program Manager for Fort Lauderdale's Sewer Design and Implementation Consent Order. He will be assisted by Mr. Johnny Gil, P.E. of Craven Thompson.

Mr. John Cestnick, PSM, with Woolpert, will serve as the Project Manager for Cityworks tasks, as well as the GIS QA/QC services of the survey field data, and City Works integration of the Survey data for this project. He has worked with the City on their asset management and Cityworks implementation.

PROGRAM MANAGEMENT APPROACH

We understand that the City has completed many of the requirements of the Water Consent Order to date. We also understand that one of the City's main priorities is to achieve full compliance with the Consent Order mandates. We will make all efforts to expedite the delivery of the water system map as soon as possible, as well as work with the City and FDEP to implement innovative ideas to expedite the process.

The proper performance of the tasks delineated in this RFQ requires a team that fully understands the City's processes, distribution system, GIS, Cityworks, data models and asset management principles. This Craven Thompson Team not only meets all of those requirements, but our team members have also worked together on multiple projects, which will result in greater efficiency and effectiveness in meeting the aggressive deadlines.

We have a clear line of sight of the City's goals and objectives with respect to the Consent Order. In our approach, we describe our ability to partner with the City, which has been proven with our work on the Sewer Consent Program, to develop a Plan to transition active Consent Order projects without losing any of the momentum that you have already built. We will continue to operate under a "right-sized" Program Management umbrella. This approach requires a large contingent of qualified surveyors, engineers, as well as project controls, GIS and Cityworks personnel who have experience successfully delivering projects in the Fort Lauderdale public works environment. Our team has been specifically constructed to deliver such a talent pool to the City. The success of this project requires a wealth of prior knowledge and experience working with and for the City of Fort Lauderdale.

We have developed our approach methodology with the City's needs and objectives in mind. We formulated a program plan that will enable our team to mobilize quickly to take on (or assist depending upon the City's direction) the execution and reporting activities for active Consent Order projects while simultaneously monitoring the data collection and valve exercising work, assisting the City in determining if a Mapping Plan revision should be proposed to the FDEP, and completing the data collection and mapping work. Our proven operational tools that leverage dashboards, Cityworks and GIS will help ensure efficient planning and scheduling of field crews while providing for real-time visualization of ongoing field activities allowing all key stakeholders to see completed work, planned work, and field survey results enabling on-demand QA/QC and communication. Additionally, inspection and condition data will be effectively managed using Cityworks' inspection work orders, as team member Woolpert led the configuration of the Cityworks' EAM system and fully understands how to ensure the effective use of its full functionality. Below is an example operational dashboard that displays progress along with identified field issues.

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The Craven Thompson team will work with the City to develop a framework for the program, including communication protocols and document sharing methods to facilitate effective team coordination. For example, the Sewer Program has successfully maintained a SharePoint site with a City Access Folder that includes an area to share large files, a deliverables folder that maintains a record of deliverables for each Task Order, Monthly Progress Reports regarding each aspect of the program, and a depository of various presentations should the City need to retrieve them easily.

The Team's goal is to avoid overspending on management tasks, thereby ensuring that resources are spent on the program deliverables. We will fully leverage those existing systems to expedite program initiation so we can begin working productively with the City immediately following the Notice to Proceed. Moreover, we will focus on right sizing the management team and program to ensure timely and orderly completion of the work, the judicious expenditure of the public's funds, and meaningful communication with the public during the process. This process is a uniquely "Fort Lauderdale" approach that works.

Early development of program management plans and deliverables is essential to guide our activities and ensure the City's program goals and objectives will be met. The Craven Thompson Team will "right-size" program plans to meet the schedule, while conforming to City's standards, and maximizing investment in actual infrastructure. Examples of program control tools include:

- Program Management/Execution Plan (PMP)
- Document Control Plan (DCP)
- Program Controls Plan (PCP)
- Communications and Stakeholder Management Plan (CSMP)
- Change Management Plan (CMP)
- Health, Safety and Environment Plan (HSE)
- Quality Control Plan (OCP)
- Outreach Plan (OP)
- Risk Management Plan (RMP)

The Craven Thompson Team and the City have a common knowledge base of document control tools for the Stormwater Program and the Sewer Program such as SharePoint, Buzzsaw, and U-serve to coordinate work products and share documents. We have also standardized our computer platforms, established a common drawing set that is compliant with the City's standards, and developed a program execution plan to enable all team members to collaborate seamlessly. This advanced work will

SECTION 4.2.5: APPROACH TO SCOPE OF WORK



streamline program startup and will allow our team to begin collaborating with the City productively from day one.

▪ **Program Management Plan**

The Program Management Plan, developed in conjunction with the City, will include a Master Program Schedule which will be monitored continuously for Consent Order compliance.

Weekly meetings that discuss progress made as well as look-ahead schedules will be discussed, along with any permit, MOT or City staff assistance required. Monthly reports will be prepared to demonstrate progress and call attention to any risks that develop.

▪ **Program Communication and Compliance Documentation**

Program Communication Documents will be prepared as needed for submittal to FDEP and Stakeholders (e.g., Neighborhood Associations, Infrastructure Task Force, City Manager's Office, etc.). Compliance documents will be developed for submittal to the FDEP upon completion of requisite milestones, as well as, to regulatory agencies having an interest or jurisdiction over this project, including required Maintenance of Traffic (MOT) permits. A copy of all permits, deliverables, correspondence, presentation, and compliance documentation will be maintained on the Program SharePoint site.

SURVEY AND DATA COLLECTION

The data collection, surveying, and mapping of the water infrastructure comprise the vast majority of the work required for this project. It will necessitate considerable effort and expertise, a large group of team members, meticulous coordination, and a proven background of being able to successfully accomplish similar tasks. The Craven Thompson Team has performed an extensive review and analysis of the current Mapping Plan and the FDEP Consent Order and has developed two different Approach Methods.

The **"First Approach Method"** is suggested because it would be the more traditional survey approach and cost-effective for the City and the Craven Thompson Team to renegotiate the data collection timeframe with FDEP and spread the costs to the City over a period of two years instead of one year while still meeting the intent of the Consent Order. This method would more closely adhere to the current requirements stipulated in the Mapping Plan and the Consent Order. However, this option would require the Craven Thompson Team to renegotiate the data collection and mapping timeframe with FDEP.

We understand that the current accepted mapping plan allows for thirty-six (36) months to complete (from the date of the effective Consent Order, July 24, 2020) the data collection and system certification efforts. As of today, no additional mapping of the water system has occurred since the Consent Order effective date. Therefore, only thirteen (13) months remain and we believe that thirteen (13) months to complete the tasks as currently detailed in the Mapping Plan is not a realistic schedule. The attached Method 1 Approach schedule delineates the actual timeframes we believe necessary to complete the data collection and system certification efforts including renegotiation with FDEP of plan requirements that we feel confident can be accomplished.

The **"Second Approach Method"** is a very aggressive schedule that will come closer to the current Consent Order data collection and certification of the potable water system map deadline of July 24, 2023. The methods employed under this effort, although significantly more costly, will allow us to accomplish the data collection and certification by October 2023. We will focus specifically on the Consent Order requirements using the Mapping Plan as a reference only and recommend ways to reduce actual field time and apply innovative advanced technologies and utilize highly trained technicians and

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field personnel to speed up the process. Both Approaches will require the City to accelerate the negotiation process and issue the Notice to Proceed so that we may begin the project no later than August 22, 2022. Due to the extremely large amount of data that will be delivered, the method of managing the City's review and acceptance will need to be discussed in detail prior to commencing the project. The schedule we prepared for the Method 2 Approach details the timeframe that meets the intent of the Consent Order for certification of the mapping of City's water system.

Survey and Data Collection Approach Method 1

The survey and data collection of the Water System will involve several steps including: evaluating the existing GIS data; creating forms from the existing GIS data for the data collection process; establishing and maintaining survey control for accuracy throughout the collection process; and providing efficient methods for the collection of the data in a consistent manner for the GIS within the project timeframe.

Horizontal Datum and Positions

A high accuracy GPS Control Survey Network was performed by Craven Thompson & Associates as part of the Stormwater Project in 2016 and further defined in the Sanitary Sewer Project in 2018-19. The horizontal coordinate system for this project will be the same as the previous projects, State Plane, Florida East Zone, NAD 83 (2011), U.S. Survey Feet. The survey control established as part of that network will be utilized for this project to maintain a high degree of horizontal positional accuracy and to keep all utilities relative to the same survey control within the City limits and the water service areas.

All features that can be located with GPS\GNSS satellite signals will be done using highly accurate survey grade GPS\GNSS rover and base station units. Those that cannot be located by GPS\GNSS (because of tree canopy, tall buildings, or other ground features that might obstruct the GPS\GNSS satellite signals) will be located by traditional field survey methods and/or the use of Mobile Lidar.

Vertical Datum and Positions

To maintain a high level of vertical accuracy across the entire City, a series of 52 GPS\GNSS monuments were established for the data collection process on the previous sanitary project. These 52 monuments and the additional 3,000 new benchmarks that we established for the sanitary project in 2018 will be utilized for this project. They will be used to calibrate the GPS\GNSS rover units carried by the survey crews for the capturing and for quality assurance of water features in the data collection process. All elevations will be referenced to the North American Vertical Datum of 1988 (NAVD88) and based on the City's Benchmark System that was enhanced and certified by the Craven Thompson Team in 2018.

Data Collection Process

The data collection process starts when we receive the City's ArcGIS geodatabase and agree upon the features and fields to be collected for this project. Meetings between the City's GIS\IT staff and the Craven Thompson Team members to establish the details needed for this will be important to the success of the project. The Craven Thompson Team will take the agreed upon GIS and create electronic forms to be used on an IPAD or Android device that can be attached to a survey-grade GPS\GNSS unit for the field data collection. Each field survey crew will receive direct training on the device and a Field Data Collection Instruction pamphlet will be created for them to always use during the data collection effort. The data collection devices will have the GIS data loaded onto them and the crew will be able to navigate, locate, edit, and add to the field version of the geodatabase. This will be a working geodatabase for the field collection effort. Once the feature is collected and stored in the device, it will also be transferred to

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the internet cloud for storage and retrieval in the office should something happen to the device. All features collected in one of the designated zones, will be reviewed and processed daily, through QA/QC, and then added to the office “working geodatabase”. This version will then be sent to the Craven Thompson Team GIS Manager who will review and do a final QA/QC before sending it to the City for review.

We anticipate that we will have a minimum of eight to twelve (8-12) field crews collecting data at any one time during this project, with ten (10) crews being the optimum number we will strive for throughout the project. We currently have six (8) Subsurface Utility companies that will be working full-time on this project.

The City’s Mapping Plan established ten (10) data collection zones which correspond to multiple sheets of the Water Atlas and are a reasonable starting place for the data collection process. However, with some further planning, we will most likely increase the number of collection zones by cutting up the existing ten zones into smaller and more manageable pieces for efficiency and project management purposes.

Once the data collection zones are agreed upon and established, previously established vertical benchmarks will be mapped and added to each zone so they can be easily found and identified in the field. These benchmarks will be used to calibrate and check the survey crews GPS\GNSS equipment and to be used for vertical checks during each day’s data collection effort. Because of the nature of GPS for vertical precision, the benchmarks surrounding each zone will be utilized to perform a localized calibration for the zone. Each feature will then be collected within that zone at least one time in the field to achieve the horizontal and vertical measurements. The positions for each feature will be analyzed for accuracy based on the GPS Dilution of Precision (DOP) in both the Position (PDOP) and the Vertical (VDOP) levels. This information will be used for the horizontal and vertical coordinates to be placed within the GIS system. The horizontal and vertical positions collected by this methodology will have an accuracy level of plus/minus 0.3 feet which will meet the accuracy needed for this project.

The field acquisition process is to collect detailed aboveground information on the water features, such as fire hydrants, system valves, control valves, air release valves, water mains, and the meters. The acquisition process will include working with the City and the Craven Thompson Team to review the ArcGIS geodatabase structure and make changes as required before commencing collection of the water features information for the GIS. The fields within the geodatabase must be in the correct format with any ArcGIS domains already predetermined to ensure the proper information is exported to the field data collectors for the survey crews.

When the geodatabase format is agreed upon, the Survey Project Manager will perform the export process from ArcGIS to either the Trimble “Terraflex” software or to ArcGIS Collector. Terraflex has been used successfully on the City’s Sanitary and Stormwater projects in 2016-2019 and it is an efficient way to collect GIS data in the field electronically. Terraflex and ArcGIS Collector can import the existing GIS fields directly from the geodatabase and create a set of forms associated with the ArcGIS information, including drop-down menus from the domains. The forms created by these processes can be uploaded directly to an IPAD, or other data collection device for use by the field crew doing the investigation of the structures. The primary focus of the initial data collection will be on locating the valves, fire hydrants and air release valves first, leaving the water meters to last.

For efficiency purposes, the data collection process will include two separate operations: 1) Horizontal and Vertical locations; and 2) Maintenance of Traffic (MOT). This process will simplify the data collection at each structure and make it both efficient and time effective. We anticipate a minimum of 20-25% of the features will require some form of MOT.

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■ *Maintenance of Traffic (MOT)*

The data collection for some of the structures will require Maintenance of Traffic (MOT). Mainly along the major roadways within the City as many of the structures lie within travel lanes of heavily traveled rights-of-way.

MOT is a critical part of this project for the safety of the survey field crews while gathering water system features. The information collection process to gather this data may or may not require the crews to open each valve cover to make measurements and observations, and take pictures. This process will require between 15 to 30 minutes per structure with the MOT, so making the area safe for the crews and for the vehicular traffic during this process is critical to the efficiency, speed, and success of the project.

We will have a full-service barricade company, known as, "MOT Plans.com, Inc.", as a subconsultant on our team to ensure the MOT is in place as the survey crews do their work. Most of the MOT barricade work will be on or along the busy highways as we work through the Data Collection Zones.

The survey crews will evaluate the roadways within each zone as they start their work to determine where they will need the MOT service and approximate dates for the data collection effort. As the MOT areas are determined, the Survey Manager will coordinate the information with the City, the Engineer, and MOT subconsultant which will start the process in motion. It is important that all of the pertinent entities, including the Police Department be aware of the MOT areas so that the safety of both individual and vehicular traffic can be made priority. Some areas will involve a rolling MOT that is set up one day for a portion of the road, and then every other day continues to move further down the road as the data collection process moves. Because of the speed at which the data collection process can be accomplished with MOT in place, the MOT setup on each section of roadway can be kept to a minimum, a day or two, in most cases.

It should be noted that expediting the survey and data collection process with MOT is dependent on the timely notification and provision of Police for the functions noted above.

■ *Subsurface Utility Engineering (SUE)*

Subsurface Utility Engineering and Mapping is spelled out in the Water Mapping Plan and will be a key component of the project for locations and connections of the multiple water mains throughout the project. According to the Mapping Plan, all mains will need to be horizontally located based on ASCE 38-02 "Standard Guideline for Collection and Depiction of Existing Subsurface Utility Data" Quality Level B using Ground Penetrating Radar (GPR) for non-toneable mains and/or Direct Induction method where toneable mains. Some mains may possibly need more information and will need ASCE 38-02 Quality Level A by performing test holes by vacuum excavation to obtain pipe attributes.

We will also utilize new technologies for this task as well as the Ground Penetrating Radar (GPR) on non-conductive and Electromagnetic Induction (EMI) on conductive watermain as stated in the Mapping Plan. One of our SUE subconsultants has "3D Radar Tomography" units for subsurface utility locations and another subconsultant has the newest technology, "Raptor Impulse Radar" units for use on this project. Both units use multiple arrays of GPR sensors to capture 3D images of the utilities underneath the units as they drive down each street in 6-foot swaths. This technology, while being very high-tech and important for this project, is not a catch-all but another technology tool that we will be using to identify and map underground waterlines for this project. These new units will be used in select areas where there are multiple utilities within a corridor and high traffic areas. This will provide a safer environment for the SUE crews to work in those areas and provide high quality data for the project.

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We have eight SUE subconsultants on our team with surveyors performing the SUE work so they can certify their locations as they proceed and certify the results.

Survey and Data Collection Approach Method 2

This alternate method will still maintain the Horizontal and Vertical datums as reflected in Method 1, but the data collection process and timeframe will change based on the use of advanced technology and staff, and by adjusting for focus of the Mapping Plan to match the intent of the Consent Order. This may require renegotiating the Water Distribution System Mapping Plan with FDEP, but we feel confident that we can assist the City with this if necessary while we are progressing with this approach.

▪ *Data Collection Process Method 2*

The data collection process for this method still starts when we receive the City's ArcGIS geodatabase and agree upon the features and fields to be collected for this project. Meetings between the City's GIS\IT staff and the Craven Thompson Team members to establish the details needed for this will be important to the success of the project. This should take place immediately after the Notice to Proceed is given.

There will be multiple methodologies used, combining traditional and new technologies to ensure that all assets are collected by the Consent Order deadlines.

Valves, Fire Hydrants, and Air Release Valves:

For this approach we recommend concentrating our field crew data collection efforts only on the valves, fire hydrants, and air release valves that appear under the "Inventory Class" field in the geodatabase as DGPS, GIS entry, Not Found, and Null. The other features that are designated as previously located by GPS or converted to GPS from Asbuilt will only be reviewed in the GIS and overlaid on high-resolution georeferenced aerials. Using both Aerial and Mobile Lidar point clouds collected as part of this project, we will perform a separate QA/QC process to verify their locations and, if necessary, correct them to meet the accuracy levels stated. This method will eliminate field work on 65% of all valves, and 46% of the fire hydrants from having to relocate them with a field crew on the ground.

For the field data collection process with survey crews on these features, the Craven Thompson Team will take the agreed upon GIS and create electronic forms to be used on an IPAD or Android devices that can be attached to survey-grade GPS\GNSS units for the field data collection. Each field survey crew will receive direct training on the device and a Field Data Collection Instruction pamphlet will be created for them to always use during the data collection effort. The data collection devices will have the GIS data loaded onto it and the crew will be able to navigate, locate, edit position, take pictures, and update to a field version of the geodatabase. This will be a working geodatabase for the field collection effort, similar to the same methods used by the Craven Thompson Team on the sanitary project in 2018-19. Once the feature is collected and stored in the device, it is also transferred to the internet cloud for storage and retrieval in the office should something happen to the device. The office personnel will then proceed with the QA/QC effort before it is accepted for the final geodatabase to the City.

The selected remaining features (6,728 valves, 2,153 hydrants, and 250 air release valves) will be located utilizing a GNSS/GPS rover unit connected to either a standalone GNSS/GPS base station unit occupying a known Survey Control monument, or one of several State-wide Real Time Kinematic (RTK) Base Station satellite systems that are accessible within the city limits of Fort Lauderdale.

This plan will also utilize two different but compatible types of Lidar (Mobile and Aerial). Using Mobile Lidar, the Craven Thompson Team will drive every street in the City within a 30-day period and obtain 3D

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point clouds of each street with an accuracy of +/- 0.3 tenths of a foot horizontally and vertically. In the downtown urban areas, where GNSS/GPS satellite signals are interrupted by tall buildings, the features may be collected by traditional survey methods and/or using locations from Mobile Lidar point clouds. The collection will include the horizontal (x-y) position and the elevation of the rim of the valve box only. Top of nut elevation inside the valve box will not be collected as part of this task as it is not necessary to meet the Consent Order and will greatly increase the timeframe for this project. This will save an enormous amount of field effort and time, with the horizontal positioning being most important for meeting the Consent Order requirements. Along with the Mobile Lidar solution, we plan to also have the City flown with brand new high density aerial Lidar with a ground point density of 100-150+ points per square meter and high-resolution aerial photogrammetry with 2-3-inch pixel resolution. The combination of Mobile Lidar, dense aerial lidar data, and high-resolution aerials will allow us to identify and extract ground features such as fire hydrants, valves, and meter boxes inside the office computer environment as opposed to boots on the ground field crews. However, this will not eliminate all field work, but greatly reduce it, and the crews will be assigned to the areas where there is dense vegetation and tree canopy and areas of obstructed views due to traffic and buildings. We do anticipate that by using this methodology, that we can eliminate up to 50 percent of the field crew work and thus speeding up the project and deliverables. As soon as we receive the Notice to Proceed from the City, we will coordinate with the 3-4 Mobile Lidar subconsultants and the Aerial Lidar firm to commence with an anticipated delivery of both within the first two months. The field crews will be working during this time to collect the data in the same manner as Method 1 Approach and restated in this approach.

Water Meters:

Recommendation: It is our opinion, due to the time constraints with the Consent Order and under normal conditions, the 62,000 + water meters, stated in the RFQ could not all be located and validated before the Consent Order due date of July 24, 2023. The original 36-month timeframe in the Consent Order was reasonable at that time on this item and would have been less costly to the City. We recommend that we assist the City to renegotiate the Consent Order timeframe with FDEP for these particular features. Our opinion is that the number of meters should be split into two categories. The first category being the Master Meters and the Commercial Meters, the second category being all other residential meters. The Master and Commercial meters represent about one-quarter (14,645) of the total meters and the most critical in our opinion to be located. The Craven Thompson Team will locate these meters as part of the overall project using Mobile and Aerial Lidar extraction and traditional survey methods where they are hidden in the lidar. We believe these meters can be reliably located and mapped by August 1, 2023.

The residential meters, while being listed in the Consent Order for determining the service lines are important to the overall mapping, however, they do not represent a high risk to any of the mains. What we recommend on the residential meters is that we utilize the City's existing survey staff to assist in this effort or the consultant that reads the meters and knows where they are to assist in mapping them as part of this project. We understand that there are currently about ten people that go in the field to read the meters. We would like to suggest that we purchase handheld GPS units that have an accuracy of +/- a meter, and provide the unit to each meter reader, or City Staff member. We will then set the Mapping grade GPS unit up and train the City Staff or the meter readers to go out and collect the xy horizontal position of each residential meter as they do their normal work operations. We believe we can train and QA/QC their work as they progress across the City getting information on the residential meters. If this is not an option, we will have existing office staff from our other team members to take care of this part of the task.

Technology driven Data Collection Method to meet the Consent Order: To meet the intent of the current Consent Order and to be as close as possible to the original deadline, we will utilize a combination of new

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technologies to cut the timeframe down and assist the City in meeting their deadline and goal. These technologies, as mentioned previously herein, have been in use by the Craven Thompson Team and some of our subconsultants for many years, and they have the expertise and qualified staff it will take to perform and deliver the final product on time.

After receiving the Notice to Proceed, we will utilize our survey subconsultants with Mobile Lidar and imagery capabilities to drive every street using un-controlled Lidar sensors and cameras within the water system limits. This will provide three-dimensional (3D) point cloud data of all features visible in every street to plus/minus 0.25' – 0.50' feet accuracy where there is GNSS/GPS satellite coverage. In the downtown area with the tall buildings, the accuracy will be plus/minus 1 foot, but still acceptable for this project. All roadways within the City should be able to be driven within twenty (20) days using this method. After driving the streets, it will take approximately another twenty (20) days processing the Mobile Lidar data. The processed point clouds can then be cut up into manageable tiles for viewing and data extraction by qualified technicians using the appropriate software. The Mobile Lidar point clouds are connected to the camera imagery collected at the same time through the software as it is driven in the field. The lidar technicians can then view the imagery and measure directly to the lidar points saving extraction time. We should be able to extract at least 50-60% of all water meters, valves, air release valves and fire hydrants using this method if the feature can be seen in the lidar. We could then be able to direct the survey field crews to the areas and features not visible in the lidar. Once the valves and fire hydrants are completed then all survey crews will concentrate on water meter locations. The aerial lidar firm will fly at an altitude of 1,800 feet aboveground level and collect both lidar and aerial photogrammetry across the entire City with 50 percent overlap along each flight line. This overlap area will produce a ground point pixel resolution of lidar points approximately 120-140 pixels per square meter and will be provided to us with ground and hydro classifications within the Lidar. There will be over 300 surveyed ground targets for the aerial firm to use for photo identification and to calibrate to with (x-y-z) positions. This should produce aerials and lidar with an accuracy of +/- 0.25 feet both horizontally and vertically. The aerials collected will be delivered in 2-3" pixel resolution and be adjusted to minimize building lean. But because of the 1,800-foot aboveground level flight, not all lean can be adjusted out of the picture. The Aerial Lidar combined with the Aerial image will provide a platform inside the computer for skilled technicians to extract water line features (fire Hydrants, water valves and meter boxes) in the areas that the Mobile Lidar cannot reach because of obstructions. We estimate that utilizing these methods will save at least 50% of field crew time for this approach.

▪ *Maintenance of Traffic (MOT)*

No matter how much advanced technology we utilize on this project, the location of some structures will require Maintenance of Traffic (MOT). Many of the structures lie within heavily traveled Rights of Way. Mobile Lidar should eliminate at least 50% or more of water features that we would need MOT for on this project.

MOT is a critical part of this project for the safety of the Survey and SUE field crews as they gather the water features. The reason for the need to have MOT is because many of the water valves lie within travel lanes on the roads and highways within the City. The information collection process to gather this data in this method will require the crew to do some measurements, observations, and/or the taking of pictures. This process will require from 15 to 30 minutes per structure with the MOT, depending on the area, and making the area safe for both the crew and vehicular traffic during this process is critical to the efficiency, speed, and success of the project.

We will have a full-service barricade company, known as, "MOT Plans.com, Inc.", as a subconsultant on our team to ensure the MOT is in place as the survey crews do their work. Most of the MOT barricade work will be on or along the busy highways as we work through the Data Collection Zones.

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The survey crews will evaluate the roadways within each zone as they start their work to determine where they will need the MOT service and approximate dates for the data collection effort. As the MOT areas are determined, the Survey Manager will coordinate the information with the City, the Engineer, and MOT subconsultant which will start the process in motion. It will be important that all of the pertinent entities, including the Police Department be aware of the MOT areas so that the safety of both individual and vehicular traffic can be made aware. There will be some areas that will involve a rolling MOT that is set up one day for a portion of the road, and then every other day continues to move further down the road as the data collection process moves. Because of the speed at which the data collection process can be accomplished with MOT in place, the MOT setup on each section of roadway can be kept to a minimum, a day or two, in most cases.

It should be noted that expediting the survey and data collection process with MOT is dependent on the timely provision of Police for the functions noted above.

▪ **Subsurface Utility Engineering (SUE)**

The Subsurface Utility Engineering and Mapping methods, spelled out in the current Mapping Plan, will be a key component of the project for accurate locations and connections of the Source and Distribution water mains throughout the City. We will also utilize new technologies for this task as well as the Ground Penetrating Radar (GPR) on non-conductive and Electromagnetic Induction (EMI) on conductive watermains as stated in the Mapping Plan. One of our SUE subconsultants has “**3D Radar Tomography**” units for subsurface utility locations and another subconsultant has the newest technology, “**Raptor Impulse Radar**” units for use on this project. Both units use multiple arrays of GPR sensors to capture 3D images of the utilities underneath the units as they drive down each street in 6-foot swaths. This technology, while being very high-tech and important for this project, is not a catch-all but another technology tool that we will be using to identify and map underground waterlines for this project. These new units will be used in select areas where there are multiple utilities within a corridor and high traffic areas. This will provide a safer environment for the SUE crews to work in those areas and provide high quality data for the project.

The timeframe for field collection, processing, and to QA/QC the data to meet the current Consent Order is approximately 300+ days with eight (8) SUE crews working continuously for nine to eleven months, so it will be imperative that the Notice to Proceed be no later than August 22, 2022 in order to meet the schedule we represent for Survey Approach Method 2. The field collection and QA/QC process for the mains is just the start. We will also need to have a comprehensive QA/QC process in the office for the GIS that will include connecting the found mains with the point features (valves, fire hydrants, and air release valves), and verifying the pipe size and materials with random test holes if necessary. If test holes become necessary, we recommend, at the most, only two (2) test holes per mile of waterline, with a total of no more than 1,500 test holes to eliminate time to meet the Consent Order.

Because of the reduced timeframe remaining in the Consent Order and our estimated completion time, there is a concern that by the time the data is collected and prepared, the City may not have time to review and accept the data. The Consent Order stated it should be completed in 36 months which was acceptable at that time, but now the City has less than a year to complete the process, which we have already stated is not possible, but we still feel that our stated schedule time can be met if expedited by the City.

We are committed to using whatever means are possible to meet the intent of the Consent Order, however, we strongly believe that we could assist the City in renegotiations with FDEP to spread the costs and timeframe out into a more manageable timeframe, while still meeting the intent of the Consent Order.

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GIS DELIVERY APPROACH

■ *GIS Data Delivery*

To ensure a seamless GIS delivery to the City, the Craven Thompson Team will meet with the City GIS and project team at the onset of the project to finalize an approach that is acceptable to all participants. The Craven Thompson Team fully understands that data security and integrity is of the utmost importance to the City IT and GIS divisions. It is also fully understood that there are specific protocols and policies that will have to be followed when data deliverables are accepted and integrated into the City's GIS production environment.

At the beginning of the project, the Craven Thompson Team will work with the City staff to outline and document the entire flow of data. It should include items such as:

- Checking out Zones or Sections of water GIS data from the City's production environment.
- Identifying all asset attributes that will be expected to be populated to meet the intent of the Consent order, and those that will not be expected to be populated because of the time crunch.
- Defining the delivery frequency, as well as the QA/QC review and acceptance process.

As outlined within the RFQ, the timeline for completing this work is extremely limited for the amount of work that is required. To complete the project within our estimated schedule, it will be imperative to have a very defined workflow, QA/QC review process, and acceptance plan.

■ *GIS Data Processing*

Prior to processing any field data, the Craven Thompson Team will develop a detailed 'Office Processing Manual' which will outline the specific data processing guidelines. This is necessary to ensure that all office technicians process the field data consistently according to City approved rules. This becomes critical with this type of mass field data collection project because various situations will be encountered that will require a defined processing approach. For example:

- Newly discovered assets: When new assets are found, like water valves, what's the exact procedure to follow for splitting a water line? How should the attribution be populated on the newly created waterline? How will the asset Facility ID be maintained?
- Assets Not Found: How will the technicians process assets identified as 'Not Found'? Will the asset be left within the database and simply marked as 'Not Found', or will the asset be moved to a different layer? If an asset like a water valve is removed, how will the two water mains be joined?

Many such situations will exist requiring discussion and a documented approach to ensure that the GIS data processing is done consistently, and according to directions approved by the City.

Field data collection and verification can be performed in the native GIS geodatabase format, or in a format that is directly compatible with the GIS schema. This will eliminate the need for any complex data conversion process, as well as reduce the effort in processing the field data. Once field data collection is complete for a specific area, office technicians will review the information and make comparisons to available as-builts as well as to the provided source GIS geodatabase. Office technicians will use the 'Office Processing Manual' to make the required data edits, as well as to complete the final review and QA/QC.

Prior to delivery, the Craven Thompson Team will QA/QC each deliverable according to a documented process. QA/QC will not only include visual inspections, but it will also include running automated scripts to check the attribute completeness.

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▪ *Cityworks Asset Management System (AMS)*

The Cityworks AMS software directly uses the City's production GIS as the asset registry. As long as there is no change to the GIS schema, or naming of the asset types, there is no special data processing required by Cityworks. As the asset data is loaded into the City's water GIS production environment, it will instantly become available to the Cityworks AMS software.

Once the Craven Thompson Team completes all mapping, we will certify to the FDEP in writing that mapping is complete in accordance with the terms of the Consent Order.

FIRMS CURRENT WORKLOAD

The Craven Thompson business plan target composite utilization rate for the company is 75%. The targeted rate accounts for holiday, vacation, marketing, administration, illness, and other non-billable time. We employ a very small yet efficient number of administration personnel which contributes significantly to reducing our costs.

Our 2022 workload was below the 2021 level as a result of the ongoing pandemic, and therefore our utilization rate was down. In 2021, Craven Thompson was at a company-wide utilization rate of 68%. For the beginning of 2022 we continued with a company-wide utilization of 68%. Uncertainty due to the pandemic and other economic issues has led to a smaller number of projects being issued by our municipal clients, while some existing projects have been placed on hold. At this time our staff is underutilized. We see recovery from this situation as a gradual process and anticipate that for the next year or so we will slowly, but steadily increase our workload and perhaps approach a 70% - 73% utilization rate at the end of that period. This will still leave excess staff availability.

Our Project Director, Program Manager, Data Collection and GIS Managers, will be able to devote all necessary time to the City of Fort Lauderdale as described under this RFQ. Based on our current and projected workload, and that of our subconsultants, the City of Fort Lauderdale can be assured that the Craven Thompson Team will provide the staff as identified in this submittal and the resources necessary to complete the services in the most efficient and timely fashion as possible.

FIRMS AVAILABLE FACILITIES, TECHNOLOGY CAPABILITIES AND OTHER AVAILABLE RESOURCES

In addition to conventional boundary topographic and construction surveys, Craven Thompson has vast experience in providing the latest in 3D Laser Scanning – High-Definition Surveying, Geodetic Control, PLSS Retracement, Hydrographic, Cadastral, Photogrammetric Control, Right-of-Way and Construction Surveys. Through the utilization of our Global Positioning System, 3D Laser Scanner and total stations with state-of-the-art data collectors, our survey data can be imported into a CAD or GIS environment which can be plotted or transferred to our clients via email, FTP, or on CD/DVD. Craven Thompson continues to refine and adapt CAD and GIS to a broad spectrum of uses. This blend of traditional and the newest technology, with personalized service, forms the core of every Craven Thompson project.

Our subconsultants also provide all of the most current SUE equipment and Mobile Lidar capabilities for location and extraction of the underground main information and to provide survey accurate feature locations with the areas that have poor GPS\GNSS satellite signals.

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Craven Thompson's Software and Hardware:

Craven Thompson continues to update all of the needed software as the new versions are available. These programs include, but are not limited to:

- Autodesk Civil 3D 2019-2022
- Autodesk Navisworks Freedom 2019-22
- Transoft Solution AutoTURN 10
- ESRI Arc GIS 10.8 Standard and Advanced
- Applied Imagery- Quick Terrain Modeler
- Global Mapper Pro
- Bentley WaterCAD Connect Edition
- Bentley SewerCAD Connect Edition
- EPA PCSWMM Hydro
- Streamline Technologies ICPR
- Custom designed Engineering Calculation Software
- Trimble Geospatial
- Trimble Terraflex
- Leica Cyclone 2021\ 3D Laser Scan Software
- Leica Jetstream 2021\ AutoCAD Server application
- Leica Cloudworx 2021\ AutoCAD Scan Software

Servers: Our server infrastructure is running two Dell PowerEdge Host Servers running VMware Virtual Software. These 2 servers run 8 virtual servers running Windows 2008 R2 and Windows 2012 R2 server software and connect to a 96 Terabyte SAN (Storage Attached Network) device configured with RAID 6 redundancy which provides us with a high availability of file access and fault tolerance. All data is backed up to a Quantum Ultrium 4 SCSI tape drive with the capacity to backup up to 9.6 TB compressed data.

Network: Our network infrastructure consists of the latest Cisco Catalyst switches and CAT 6 network cabling with speeds up to 1 GBS.

Workstations: Our workstations are Dell Precision line workstations all running Windows 10 Professional with either Xeon or i7 Dual and Quad Core processors with solid state hard drives and a minimum 16 Gigabytes of RAM. Production workstation utilizes a minimum 4 GB video cards with dual 24" high resolution monitors.

Plotting: We have an in-house Ricoh MP W8140 high-capacity wide format plotter with color scanning capability and two Hewlett Packard High Resolution 1050 Design Jet plotters.

Surveying Department Resources and Equipment:

A complete list of Craven Thompson's equipment and software are as follows:

- **Craven Thompson Vehicles**
 - Eight (8) Ford F-150 Pick-ups fully equipped for Surveying Crews
 - Two (2) - 16-foot John Boat w/motor
- **Craven Thompson Field Data Collection GPS**
 - One (1) Trimble R8 GNSS GPS Systems Base Station
 - Six (6) Trimble GNSS RTK GPS Systems [Three (3) Trimble R2 and Three (3) Trimble R10]
 - One (1) Trimble R9 GNSS GPS Base Station with Trimble VRS Network
 - Five (5) Trimble DiNi Digital Level 0.3mm
 - One (1) Trimble TSC3 data collectors with Trimble Access Software
 - Six (6) Trimble TSC7 data collectors with Trimble Access Software
 - Two (2) Intuicom bridge radios
- **Field Data Collection**
 - Three (3) Trimble Robotic Total Stations
 - Two (2) Trimble Total Stations
 - Ten (10) Radios
 - Seven (7) Spectra Precision 3L Data Collectors with Survey Pro Software
 - Six (6) Leica Total Stations
 - Seven (7) Leica Levels
 - Two (2) Apple IPAD Pro
 - Two (2) Android Tablets
 - One (1) Trimble GE07x GIS Data Collection Unit
- **Sonar Equipment**
 - One (1) Hydrolite Single Beam Echo Sounder
 - One (1) Hydrone Portable Hydro-Lite Boat

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- **3D Laser Scanning**
Leica C10 Laser Scanner - 3D Laser High-Definition Survey System
Cyclone 2021 Scanning Software
CloudWorx Pro 2021 for AutoCAD

Team Members and Subconsultants Software and Hardware:

All Survey Team members and Subconsultants have the latest in surveying and SUE equipment that will be utilized on this project. Some key members and subconsultants have specialized and new technology that may be used for this project.

- **WOOLPERT**
Advanced Surveying & Mapping software and hardware:
ArcGIS and Cityworks AMS, SUE (GPR, EMI, Vacuum Excavation) Aerial Photogrammetry and Lidar Services, Leica Pegasus 2 Mobile Lidar Unit and software
- **CRAIG A. SMITH & ASSOCIATES**
Advanced Surveying & Mapping software and hardware:
SUE (3D Radar Tomography System & Software, GPR, EMI, Vacuum Excavation)
- **MANUEL G. VERA & ASSOCIATES**
Advanced Surveying & Mapping software and hardware:
Leica Pegasus 2, Mobile Lidar Units and software, SUE (GPR, EMI, Vacuum Excavation)
- **KEITH & ASSOCIATES**
Advanced Surveying & Mapping software and hardware:
Leica Pegasus 2, Mobile Lidar Units and software, SUE (GPR, EMI, Vacuum Excavation)
- **SAM, LLC**
Advanced Surveying & Mapping software and hardware:
Riegl VMX-2HA, Mobile Lidar Units and software, SUE (Raptor Impulse Radar System & Software, GPR, EMI, Vacuum Excavation) Aerial Photogrammetry, Drones and Lidar services



Typical 3-D Radar Tomography Scanning Unit

Multi-Channel GPR

The Raptor system is a multi-channel ground penetrating radar system designed for utility locating and mapping. The Raptor utilizes 18 separate channels at 450 MHz to cover wide surfaces in a single path. Data is spatially identified using GPS surveying technology. These units detect additional features such as voids, trench sizes, backfill identification, abandoned underground structures, and other irregularities not identifiable by other means. Using this technology allows SAM, LLC to clarify the horizontal and vertical position of the utilities, while modeling other features identified during the scan. From this, 3-D models for deliverables can be created.



PROPOSED SCHEDULE - APPROACH METHODS 1 & 2

REFER TO PROPOSED SCHEDULE, LOCATED AT THE END OF THIS SECTION.

TASK	C.O Paragrag h	ASSIGNED TO	PROGRES S	START	END	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2</
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Section 4.2.6: References

Section 4.2.6

SECTION 4.2.6: REFERENCES



REFERENCES

Craven Thompson & Associates (Data Collection and Mapping)

REFERENCE NO. 1:

Client Contact:

Mr. Karim L. Rossy, Development Engineer 3
 NMB Water / Jacobs
 17050 NE 19th Avenue
 North Miami Beach, Florida 33162
 Phone: (305) 948-2980 / Email: karim.rossy@jacobs.com

Description of Work:

North Miami Beach Water & Sewer G.I.S. - The purpose of the 25,600-Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format. The Project included the entire North Miami Beach Utility service area. The process included conversion of existing AutoCAD files, into the same coordinate system as the GIS, so that future updates will be more easily transferred between the two systems, for updates and maintenance. The project involved setting up a GIS Network file structure for the city to insert existing and future documentation into, as well as, adding GIS database information in the future.

- **Project Duration:** 1½ years
- **Year the Project was Completed:** 2016
- **Total Cost of the Construction, Estimated and Actual:** Fees \$1,065,580.00

REFERENCE NO. 2:

Client Contact:

Mr. D. Chidi Tobias, Civil Engineer
 Public Works Department
 City of North Miami Beach
 17050 NE 19th Avenue, 2nd Floor
 North Miami Beach, Florida 33162
 Phone: (305) 947-7581 ext. 2313
 Email: Chidi.Tobias@citynmb.com

Description of Work:

Stormwater G.I.S./Surveying Data Collection Project - The City of North Miami Beach is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The data was collected by a Unique ID. Craven Thompson provided the city with a copy of the updated geodatabase with all the data fields that were collected. The GIS data collected consists of:

Structure type (junction, inlet, control structure, drainage well):

- Invert elevation(s) and direction, Bottom of structure, Pollution retardant baffles (PRBs) present, (if present) weir elevation and geometry, (if present) bleeder elevation and geometry, Condition (pictures for documentation)

SECTION 4.2.6: REFERENCES



Pipes:

- Diameter (inches) Material (RCP, CMP, HDPE, Other), Condition (pictures for documentation)

Culvert and Outfalls:

- Upstream/Downstream Invert elevations, Material (CMP, RCP), Type (Circular, Elliptical, H. Ellipse, Rectangular), Diameter (inches), Single barrel vs. multiple, Condition (pictures for documentation)

Headwalls and Seawalls:

- Headwall treatment (Square Edge, Projecting Outlet, Mitered Slope)
- Headwall Material (Concrete, Rip Rap)
- Seawall Construction Material (boulder and rock, sheet pipes, cast concrete, rip rap)
- Top of seawall elevation
- Condition (pictures for documentation)

- **Project Duration:** 1 year
- **Year the Project was Completed:** 2018
- **Total Cost of the Construction, Estimated and Actual:** Fees \$200,000.00

REFERENCE NO. 3:

Client Contact:

Mr. Ranthus Fouch, P.E.
 Sr. Civil Engineer
 Public Works Department
 Seminole Tribe of Florida
 5700 Griffin Road, Suite 200
 Davie, Florida 33314
 Phone: (954) 203-1034
 Email: ranthusfouch@semtribe.com

Description of Work: Hollywood Seminole Reservation Stormwater Data Collection/GIS

The Hollywood Seminole Reservation is generally bounded by Stirling Road on the north and by Sheridan Street on the south and includes the Hard Rock Hotel and Casino which is located north of Stirling Road. The east and west boundaries are formed by existing residential neighborhoods in the City of Hollywood. Craven Thompson updated the Tribe's stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation.

Craven Thompson acquired accurate horizontal and vertical information on every stormwater/drainage feature on the Tribe's Hollywood Reservation. We reviewed existing storm sewer surveys and as-builts that could assist with GIS location and with this information our survey crew measured each structure to get accurate horizontal and vertical information for the Tribe's GIS system. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, age, and structure condition were obtained in the field.

We modified the Tribes' GIS database to include new relevant information and to include all information from the data collection efforts and condition assessment

- **Project Duration:** 1 ½ -years for GIS/Stormwater data collection efforts.
- **Year the Project was Completed:** 2021 for GIS/Stormwater data collection efforts.
- **Total Cost of the Construction, Estimated and Actual:** This was not a construction project. Fees for GIS/Data collection efforts were \$143,720.00

SECTION 4.2.6: REFERENCES



Hazen and Sawyer (Program Management)

REFERENCE NO. 4:

Client Contact:

Mt. Hernán Guadalupe, DBA, MEng, PMP, PSP, Engineer II
Baltimore City Department of Public Works
Horizontal Utility Project Delivery Section (Water)
200 Holliday Street, Suite 305
Baltimore, Maryland 21202
Phone: (410) 396-8189 (office) / (410) 804-5279 (Mobile)
Email: Hernan.guadalupe@baltimorecity.gov

Description of Work:

Program management services for the DPW Water Utilities section, including planning, design management and construction management in support of the City's goal of 15 miles of water main replacement every fiscal year.

- **Project Duration:** 2015 to 2018
- **Year the Project was Completed:** Program Management Services ended in 2018
- **Total Cost of the Construction, Estimated and Actual:** Approximately \$415M over the three years of Program Management.

REFERENCE NO. 5:

Client Contact:

Mr. Daniel A. White, Deputy Director
Jefferson County Commission, Environmental Services Department
Horizontal Utility Project Delivery Section (Water)
716 Richard Arrington Jr. Boulevard North, Suite A300
Birmingham, Alabama 35203
Phone: (205) 214-8610 (Office) / (205) 281-8931 (Mobile)
Email: whited@jaccal.org

Description of Work:

Asset Management Program for the Collection System with primary goal to reduce/eliminate SSOs from a 2-year storm event.

- **Project Duration:** 3-year contracts until completion; initial term began in 2014 with renewals in 2017, 2020. Program planned to continue until 2035.
- **Year the Project was Completed:** Projected completion is scheduled for 2035.
- **Total Cost of the Construction, Estimated and Actual:** Per the CIP as of 12/15/2021, the total construction cost is \$1,228,309,000. (Hazen is not managing all of this but as Program Manager we do the CIP planning). Work completed: Contract amount = \$176,195,914; estimated = \$187,255,453; completed to date = \$130,390,952

Section 4.2.7: Sub-Consultants

Section 4.2.7

SECTION 4.2.7: SUB-CONSULTANTS



QUALIFICATIONS OF THE SUBCONSULTANTS

HAZEN & SAWYER - PROGRAM MANAGEMENT

999 Ponce de Leon Boulevard, Suite 1150
Coral Gables, Florida 33431
Phone: (305) 443-4001



Hazen has a staff of over 1,200 professional engineers, scientists, and support personnel who specialize in a wide range of engineering disciplines focused on the field of water and wastewater. Their professionals are experienced in the design of sanitary sewer systems, sanitary sewer treatment plants, stormwater management systems, and rehabilitation plans. Hazen's experience with the City of Fort Lauderdale ongoing Sewer and Stormwater programs and understanding of their needs and expectations will help ensure that the aggressive schedule of this project will be met. Hazen regularly uses powerful real time operations' dashboards to manage and track crew scheduling as well as real time views of data collected and tracking and resolution of field issues.

WOOLPERT, INC. - GIS COORDINATION & MANAGEMENT / DATA COLLECTION

6100 Blue Lagoon Drive, Suite 440
Miami, Florida 33126
Phone: (305) 418-9370



Woolpert began working with the City of Fort Lauderdale in 2000 when selected to build the City's first utility GIS network. Woolpert was then contracted to develop the GIS database design, field survey utility assets, convert utility as-builts, migrate existing asset maintenance data (HANSEN), and develop system applications for the newly created GIS data. Data Collection: Woolpert collected GIS data by scanning, indexing, and georeferencing available source documents, such as city atlases, sewer books, intersection detail drawings, and as-built drawings. Utility Mapping: Using the accurate field survey locations of the above ground utility assets, Woolpert used heads-up digitizing to then create the underground utility networks relying on the provided City utility as-builts. Over the next two decades Woolpert continued to provide various surveying and GIS related professional services to the city. Most recently, Woolpert was selected by the city to implement a new asset and maintenance management system, for the water, wastewater, and stormwater divisions.

KEITH AND ASSOCIATES, INC. - SURVEYING, MOBILE LIDAR / S.U.E. LOCATES

301 East Atlantic Blvd.
Pompano Beach, Florida 33060
Phone: (954) 788-3400



Keith and Associates (Keith) was incorporated as a Florida Corporation in 1998. As a mid-size close-knit firm of over 180 professionals, Keith provides surveying and mapping, subsurface utility engineering, utility coordination, planning, civil engineering, traffic and transportation engineering, landscape architecture, construction management, and virtual design and construction services with offices in Pompano Beach, Fort Lauderdale, Miami, West Palm Beach, Orlando, and Tallahassee.

SURVEYING AND MAPPING, LLC (SAM) - SURVEYING, MOBILE LIDAR & S.U.E. SERVICES

- | | |
|---|--|
| ▪ 1800 Pembroke Drive, # 300
Orlando, Florida 32810
Phone: (512) 685-3542 | ▪ 2844 Pablo Avenue
Tallahassee, Florida 32308
Phone: (512) 685-3542 |
|---|--|



SAM offers a complete suite of geospatial services including land surveying, airborne/mobile/terrestrial LiDAR, Geographic Information Systems (GIS), Subsurface Utility Engineering (SUE), Utility Coordination (UC), aerial mapping, and photogrammetry.

SECTION 4.2.7: SUB-CONSULTANTS



MANUEL G. VERA & ASSOCIATES, INC. - SURVEYING MOBILE LIDAR & S.U.E. SERVICES

13960 SW 47th Street
Miami, Florida 33175
Phone: (305) 221-6210



Manuel G. Vera & Associates, Inc. has been providing design survey and right of way mapping services to the Central and South Florida area for over forty (40) years, servicing the Florida Department of Transportation for over thirty (30) years in Districts 4, 6, the Turnpike and recently in Districts 1, 5 and 7. In addition to the Florida Department of Transportation, Manuel G. Vera's survey experience in South Florida is second to none.

CRAIG A. SIMITH & ASSOCIATES - SURVEYING & S.U.E. SERVICES

277 Goolsby Boulevard, Unit C
Deerfield Beach, Florida 33442
Phone: (954) 782-8222



Craig A. Smith and Associates, Inc. (CAS) was established in 1980. CAS provides complete subsurface utility engineering and location services utilizing the latest in electronic verification, ground penetrating radar, vacuum excavation and GPS survey equipment. CAS performs subsurface utility engineering providing utility mapping, electromagnetic designating, 2D radar designating, 3D radar tomography, & vacuum soft digs.

RITZEL-MASON - SURVEYING & S.U.E. SERVICES

5119 Beachwood Road
Delray Beach, Florida 33484
Phone: (786) 472-0358



Ritzel-Mason follows the industry recognized ASCE 38 - "Standard Guideline for the Collection and Depiction of Existing Underground Utility Data where quality levels are noted for all utilities investigated. They treat utility issues using engineering judgement, focusing attention to properly assess the potential utilities impacted on each project. They use the latest utility detection equipment including Ground Penetrating Radar (GPR), pipe and cable locators from Radio Detection for soft dig test holes.

ZEMAN CONSULTING GROUP - SURVEYING & S.U.E. SERVICES

3970 RCA Blvd., Suite 7750
Palm Beach Gardens, Florida 33410
Phone: (561) 223-8035



Zeman Consulting Group (ZCG) is focused on serving the public sector through both direct contracts and continuing professional services contracts. Since opening in April of 2021, ZCG has been awarded multiple FDOT and South Florida Water Management District contracts. ZCG is also a Certified SBE with FDOT, Palm Beach County, City of West Palm Beach, Solid Waste Authority and South Florida Water Management District.

INFRAMAP CORP. - SURVEYING & S.U.E. SERVICES

1100 N. Florida Mango Road, Suite D
West Palm Beach, Florida 33409
Phone: (561) 586-0790



Since 1987, InfraMap Corp. has been providing professional subsurface utility engineering (SUE) and locating services. InfraMap was one of the earliest subsurface utility engineering and locating firms established, and since their founding, they have focused on being a quality leader and expert in the field. To date, they have successfully completed some of the largest and most complex utility locating and designating projects ever undertaken. As of 2022, they have completed more than 26,000 projects, designated more than 32 million feet of utilities, and completed more than 130,000 air vacuum excavation test holes.

SECTION 4.2.7: SUB-CONSULTANTS



GIBBS LAND SURVEYORS - SURVEYING SERVICES

2131 Hollywood Boulevard, Suite 204
Hollywood, Florida 33020
Phone: (954) 923-7666

Gibbs Land Surveyors has been doing business from the same location for over thirty (30) years. Part of Gibbs' commitment to the community is their location. From their Hollywood office, in close proximity to Fort Lauderdale, they have provided a wide range of services related to the requirements of this project including: Boundary, Topographic, Hydrographic, Data Collection, As-Built and Utility Locations, Construction Staking, Vertical and Horizontal Control Surveys, ALTA/NSPS Land Title Surveys, Plat Recordation, Condominium Document preparation and Legal Descriptions.

STONER & ASSOCIATES - SURVEYING SERVICES

4341 SW 62nd Avenue
Davie, Florida 33314
Phone: (954) 585-0997



Since 1988, Stoner & Associates has practiced the art and science of land surveying, rising to the top of their industry with a focus on good character, reputation and the successful completion of projects. At Stoner & Associates, they are always seeking innovative solutions to improve their survey products and reduce turn-around times. They are continually updating their equipment and software to ensure rapid and accurate data acquisition. Their personnel are trained to look for innovative ways to approach your project.

MCLAUGHLIN ENGINEERING COMPANY - SURVEYING SERVICES

1700 NW 64th Street, Suite 400
Fort Lauderdale, Florida 33309
Phone: (954) 763-7611



McLaughlin Engineering Company has been proud to serve the various Surveying, Engineering, Land Planning and Platting needs of our clients over 75 years. They strive to ensure that the highest levels of quality control and customer satisfaction are placed upon the unique requirements of each individual client.

MOT PLANS.COM - MAINTENANCE OF TRAFFIC

631 NE 45th Street, #3247
Oakland Park, Florida 33334
Phone: (954) 560-0450



MOT Plans was founded in 2003 with the idea of a more hands on approach to providing superior service. Full-service barricade company providing complete temporary traffic control for any situation. They can provide everything needed from start to finish. MOT Plans starts by evaluating the project to assess the needs, then draw a maintenance of traffic plan to submit to the appropriate agency. Once the plan is approved, MOT Plans will provide the equipment and setup the plan according to FDOT standards. MOT Plans is certified in the State of Florida as a Disadvantaged Business Enterprise and certain municipalities as a SBE and MBE.

PURE TECHNOLOGIES / DBA WACHS WATER SERVICES - VALVE CONDITIONING / EXERCISING

8920 State Route 108, Suite D
Columbia, MD 21045
Phone: (443) 766-7873



Pure Technologies U.S. Inc./dba Wachs Water Services (WWS) is dedicated to helping utilities optimize control of their aging water distribution infrastructures, which reduces the consequences of failure and improves water quality. By deploying the proven methodologies, they have perfected across North America, they provide actionable information that can be used immediately to overcome the most complex underground water infrastructure challenges. They are certified as a General Contractor in the state of Florida. Their experience on similar sized projects as described in their references illustrates their qualifications.

Section 4.2.8: Required Forms



CRAVTHO-01

ANERVI

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

3/24/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Corporate Insurance Advisors, LLC 1401 E. Broward Blvd. Suite 103 Fort Lauderdale, FL 33301	CONTACT NAME:	
	PHONE (A/C, No, Ext): (954) 315-5000	FAX (A/C, No): (954) 315-5050
	E-MAIL ADDRESS: service@ciafl.net	
INSURED Craven Thompson & Associates, Inc. 3563 NW 53rd Street Fort Lauderdale, FL 33309	INSURER(S) AFFORDING COVERAGE	
	INSURER A : Hartford Casualty Insurance Company	NAIC # 29424
	INSURER B : Hartford Ins Co of the Midwest	37478
	INSURER C : Continental Casualty Co.	20443
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY						
	☐ CLAIMS-MADE ☒ OCCUR			21UUNOL5298	12/1/2021	12/1/2022	EACH OCCURRENCE \$ 1,000,000
	☒ Data Breach Retro Dat						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000
							MED EXP (Any one person) \$ 10,000
							PERSONAL & ADV INJURY \$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$ 2,000,000
	☐ POLICY ☒ PROJECT ☐ LOC						PRODUCTS - COMP/OP AGG \$ 2,000,000
	OTHER:						EMPLOYEE BENEFIT \$ 2,000,000
B	AUTOMOBILE LIABILITY						
	☒ ANY AUTO			21UENOL5299	12/1/2021	12/1/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	☐ OWNED AUTOS ONLY	☐ SCHEDULED AUTOS					BODILY INJURY (Per person) \$
	☐ HIRED AUTOS ONLY	☐ NON-OWNED AUTOS ONLY					BODILY INJURY (Per accident) \$
							PROPERTY DAMAGE (Per accident) \$
							\$
A	☒ UMBRELLA LIAB ☒ OCCUR						
	☐ EXCESS LIAB ☐ CLAIMS-MADE			21XHUOL5300	12/1/2021	12/1/2022	EACH OCCURRENCE \$ 6,000,000
	DED ☒ RETENTION \$ 10,000						AGGREGATE \$ 6,000,000
							\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A	21WBOL6H4G	1/1/2022	1/1/2023	☒ PER STATUTE ☐ OTH-ER \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. EACH ACCIDENT \$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C	Prof Liab incl Poll			591918336	3/30/2022	3/30/2023	Each Claim 3,000,000
C	Prof Liab incl Poll			591918336	3/30/2022	3/30/2023	Aggregate 4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CANCELLATION

For Proposals Purposes Only

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

ACORD 25 (2016/03)

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CAM 22-1019

10/20/2022

BidSync

Exhibit 4

p. 92

Page 92 of 124

Supplier Response Form**NON-COLLUSION STATEMENT:**

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME**RELATIONSHIPS**

None

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

Authorized Signature

Vice President, Engineering
Title

Patrick J. Gibney, P.E.
Name (Printed)

6/27/2022
Date

Supplier Response Form**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

Authorized Signature *

Patrick J. Gibney, P.E., Vice President, Engineering
Print Name and Title *

6/27/2022 *
Date

Supplier Response Form**E-VERIFY AFFIRMATION STATEMENT**

RFP/Bid /Contract No: RFQ # 12665-1026

Water Consent Order Program
Management and Mapping Services

Project Description:

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

- (a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- (b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: Craven, Thompson & Associates, Inc.

Authorized Company Person's Signature:



Authorized Company Person's Title: Vice President, Engineering

Date: 6/27/2022

9/15/2020

Supplier Response Form

BID/PROPOSAL CERTIFICATION

Please Note: It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through www.BidSync.com prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration) Craven, Thompson & Associates, Inc. * EIN (Optional): 59-0948029

Address: 3563 NW 53rd Street *

City: Fort Lauderdale

* State: FL

* Zip: 33309

*

Telephone No.: 954-739-6400

* FAX No.: 954-739-6409

* Email: pgibney@craventhompson.com

*

Delivery: Calendar days after receipt of Purchase Order (section 1.02 of General Conditions): To Be Determined

Total Bid Discount (section 1.05 of General Conditions): N/A

Check box if your firm qualifies for MBE / SBE / WBE (section 1.09 of General Conditions): ☐

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>
1	5/23/2022				
*	*				
2	6/16/2022				

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. **You must also click the "Take Exception" button.**

None.

*

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal.

I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Patrick J. Gibney, P.E. *

Name (printed)

6/27/2022 *

Date

Signature

Vice President, Engineering *

Title

Revised 4/28/2020



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 1

RFQ No. 12665-1026 WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES

ISSUED: May 23, 2022

This addendum is being issued to make the following changes:

1. The opening date has been changed to Monday, June 27, 2022 at 2:00PM Local Time.

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

+1 954-686-7296,,696755482# United States, Fort Lauderdale

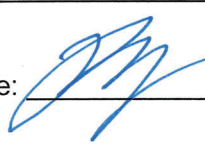
Phone Conference ID: 696 755 482#

All other terms, conditions, and specifications remain unchanged.

Erick Martinez
Senior Procurement Specialist

Company Name: Craven, Thompson & Associates, Inc.

(please print)

Bidder's Signature:  Patrick J. Gibney, P.E., Vice Pres., Engineering

Date: June 27, 2022



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 2

RFQ No. 12665-1026 WATER CONSENT ORDER PROGRAM MANAGEMENT AND MAPPING SERVICES

ISSUED: June 16, 2022

This addendum is being issued to make the following changes:

1. The following new section is hereby added to Section III, "Scope of Services" of this solicitation.

- Section 3.5 "Incentive – Disincentive" (see attached)

All other terms, conditions, and specifications remain unchanged.

Erick Martinez
Senior Procurement Specialist

Company Name: Craven, Thompson & Associates, Inc.

(please print)

Bidder's Signature:  Patrick J. Gibney, P.E., Vice Pres., Engineering

Date: June 27, 2022

LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this bid/proposal. Violation of the foregoing provision may result in contract termination.

- | | | |
|-----|--|--|
| (1) | (Business Name) | is a Class A Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt <u>and</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City. |
| (2) | Craven, Thompson & Associates, Inc.
(Business Name) | is a Class B Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Business Tax Receipt <u>or</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City. |
| (3) | (Business Name) | is a Class C Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Broward County Business Tax Receipt shall be provided within ten (10) calendar days of a formal request by the City. |
| (4) | (Business Name) | is a Class D Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186, and does not qualify for Local Preference consideration. |
| (5) | (Business Name) | requests a Conditional Class A classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |
| (6) | (Business Name) | requests a Conditional Class B classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |

BIDDER'S COMPANY: Craven, Thompson & Associates, Inc.

AUTHORIZED
COMPANY
PERSON:

Patrick J. Gibney, P.E.

PRINT NAME



SIGNATURE

6/27/2022

DATE

Forms Non-ISO – Revised 7/2/2021

**CITY OF FORT LAUDERDALE BUSINESS TAX YEAR 2021-2022**

Business Tax Division

700 NW 19TH AVE. | FORT LAUDERDALE, FL 33311 | (954) 828 - 5195

Business ID: BL-1301193**Business Name:** GIBNEY,PATRICK**Business Address:** 3563 NW 53 ST

PATRICK GIBNEY
CRAVEN THOMPSON & ASSOCIATES INC
3563 NW 53 ST
FORT LAUDERDALE FL 33309

TAX CATEGORIES

408800 ENGINEER

Contact: PATRICK GIBNEY**Business Email:** Tamcdonald@Craventhompson.Com

- This Receipt is issued for the period commencing October 1st and ending September 30th of the years shown above.
- If you have closed or moved out of the city, please email businesstax@fortlauderdale.gov and include the Business ID #.
- A transfer of business location within city limits is subject to zoning approval. Complete a Business Tax Transfer Application online to obtain the necessary approval. A transfer fee of 10% of the Business Tax fee applies, not less than \$3.00, no more than \$25.00.
- If you have sold your business, please email a copy of the Bill of Sale to businesstax@fortlauderdale.gov and include the Business ID #. A transfer of ownership will incur a transfer fee of 10% of the Business Tax fee, not less than \$3.00, no more than \$25.00.

Please be advised that this issuance of a Business Tax Receipt establishes that the business you intend to conduct is a use permitted by the City Zoning Code for the location at which you intend to operate. The issuance of a Business Tax Receipt in no way certifies that the property located at this address is in compliance with other provisions of the City Code of Ordinances.

700 NW 19TH AVE.
Fort Lauderdale, FL 33311
TEL 954 828 5195
WWW.FORTLAUDERDALE.GOV

DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the disadvantaged business enterprise preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than **thirty (30)** calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

- | | | | |
|-----|-----|-----------------|--|
| (1) | N/A | (Business Name) | is a disadvantaged Class 1 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (2) | N/A | (Business Name) | is a disadvantaged Class 2 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the City with full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (3) | N/A | (Business Name) | is a disadvantaged Class 3 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (4) | N/A | (Business Name) | is a disadvantaged Class 4 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class 1, Class 2, or Class 3 business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual. |
| (5) | N/A | (Business Name) | requests a Conditional Class 1 classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |
| (6) | N/A | (Business Name) | requests a Conditional Class 2 classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |

BIDDER'S COMPANY: Craven, Thompson & Associates, Inc.

AUTHORIZED
COMPANY
PERSON:

Patrick J. Gibney, P.E.

PRINT NAME

SIGNATURE

6/27/2022

DATE

Forms Non-Iso – revised 7/2/2021

**CITY OF FORT LAUDERDALE
GENERAL CONDITIONS**

These instructions and conditions are standard for all contracts for commodities or services issued through the City of Fort Lauderdale Procurement Services Division. The City may delete, supersede, or modify any of these standard instructions for a particular contract by indicating such change in the Invitation to Bid (ITB) Special Conditions, Technical Specifications, Instructions, Proposal Pages, Addenda, and Legal Advertisement. In this general conditions document, Invitation to Bid (ITB), Request for Qualifications (RFQ), and Request for Proposal (RFP) are interchangeable.

PART I BIDDER PROPOSAL PAGE(S) CONDITIONS:

- 1.01 BIDDER ADDRESS:** The City maintains automated vendor address lists that have been generated for each specific Commodity Class item through our bid issuing service, BidSync. Notices of Invitations to Bid (ITB'S) are sent by e-mail to the selection of bidders who have fully registered with BidSync or faxed (if applicable) to every vendor on those lists, who may then view the bid documents online. Bidders who have been informed of a bid's availability in any other manner are responsible for registering with BidSync in order to view the bid documents. There is no fee for doing so. If you wish bid notifications be provided to another e-mail address or fax, please contact BidSync. If you wish purchase orders sent to a different address, please so indicate in your bid response. If you wish payments sent to a different address, please so indicate on your invoice.
- 1.02 DELIVERY:** Time will be of the essence for any orders placed as a result of this ITB. The City reserves the right to cancel any orders, or part thereof, without obligation if delivery is not made in accordance with the schedule specified by the Bidder and accepted by the City.
- 1.03 PACKING SLIPS:** It will be the responsibility of the awarded Contractor, to attach all packing slips to the OUTSIDE of each shipment. Packing slips must provide a detailed description of what is to be received and reference the City of Fort Lauderdale purchase order number that is associated with the shipment. Failure to provide a detailed packing slip attached to the outside of shipment may result in refusal of shipment at Contractor's expense.
- 1.04 PAYMENT TERMS AND CASH DISCOUNTS:** Payment terms, unless otherwise stated in this ITB, will be considered to be net 45 days after the date of satisfactory delivery at the place of acceptance and receipt of correct invoice at the office specified, whichever occurs last. Bidder may offer cash discounts for prompt payment but they will not be considered in determination of award. If a Bidder offers a discount, it is understood that the discount time will be computed from the date of satisfactory delivery, at the place of acceptance, and receipt of correct invoice, at the office specified, whichever occurs last.
- 1.05 TOTAL BID DISCOUNT:** If Bidder offers a discount for award of all items listed in the bid, such discount shall be deducted from the total of the firm net unit prices bid and shall be considered in tabulation and award of bid.
- 1.06 BIDS FIRM FOR ACCEPTANCE:** Bidder warrants, by virtue of bidding, that the bid and the prices quoted in the bid will be firm for acceptance by the City for a period of one hundred twenty (120) days from the date of bid opening unless otherwise stated in the ITB.
- 1.07 VARIANCES:** For purposes of bid evaluation, Bidder's must indicate any variances, no matter how slight, from ITB General Conditions, Special Conditions, Specifications or Addenda in the space provided in the ITB. No variations or exceptions by a Bidder will be considered or deemed a part of the bid submitted unless such variances or exceptions are listed in the bid and referenced in the space provided on the bidder proposal pages. If variances are not stated, or referenced as required, it will be assumed that the product or service fully complies with the City's terms, conditions, and specifications.
- By receiving a bid, City does not necessarily accept any variances contained in the bid. All variances submitted are subject to review and approval by the City. If any bid contains material variances that, in the City's sole opinion, make that bid conditional in nature, the City reserves the right to reject the bid or part of the bid that is declared by the City as conditional.
- 1.08 NO BIDS:** If you do not intend to bid please indicate the reason, such as insufficient time to respond, do not offer product or service, unable to meet specifications, schedule would not permit, or any other reason, in the space provided in this ITB. Failure to bid or return no bid comments prior to the bid due and opening date and time, indicated in this ITB, may result in your firm being deleted from our Bidder's registration list for the Commodity Class Item requested in this ITB.
- 1.09 MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS DEFINITIONS:** The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least 51 percent of which is owned by minority group members or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by minority group members. For the purpose of the preceding sentence, minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least 51 percent of which is owned by females or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently owned and operated, has either fewer than 100 employees or less than \$1,000,000 in annual gross receipts.

BLACK, which includes persons having origins in any of the Black racial groups of Africa.

WHITE, which includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.

HISPANIC, which includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.

NATIVE AMERICAN, which includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.

ASIAN AMERICAN, which includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

1.10 MINORITY-WOMEN BUSINESS ENTERPRISE PARTICIPATION

It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms. Proposers are requested to include in their proposals a narrative describing their past accomplishments and intended actions in this area. If proposers are considering minority or women owned enterprise participation in their proposal, those firms, and their specific duties have to be identified in the proposal. If a proposer is considered for award, he or she will be asked to meet with City staff so that the intended MBE/WBE participation can be formalized and included in the subsequent contract.

1.11 SCRUTINIZED COMPANIES

As to any contract for goods or services of \$1 million or more and as to the renewal of any contract for goods or services of \$1 million or more, subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed*, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2019), as may be amended or revised. As to any contract for goods or services of any amount and as to the renewal of any contract for goods or services of any amount, the Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2019), and that it is not engaged in a boycott of Israel. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2019), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2019), or is engaged in a boycott of Israel, or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2019), as may be amended or revised.

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1.12 DEBARRED OR SUSPENDED BIDDERS OR PROPOSERS

The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

Part II DEFINITIONS/ORDER OF PRECEDENCE:

2.01 BIDDING DEFINITIONS The City will use the following definitions in its general conditions, special conditions, technical specifications, instructions to bidders, addenda and any other document used in the bidding process:

INVITATION TO BID (ITB) The solicitation document used for soliciting competitive sealed bids for goods or services.

INVITATION TO NEGOTIATE (ITN) All solicitation documents, regardless of medium, whether attached to or incorporated by reference in solicitations for responses from firms that invite proposals from interested and qualified firms so the city may enter into negotiations with the firm(s) determined most capable of providing the required goods or services.

REQUEST FOR PROPOSALS (RFP) A solicitation method used for soliciting competitive sealed proposals to determine the best value among proposals for goods or services for which price may not be the prevailing factor in award of the contract, or the scope of work, specifications or contract terms and conditions may be difficult to define. Such solicitation will consider the qualifications of the proposers along with evaluation of each proposal using identified and generally weighted evaluation criteria. RFPs may include price criteria whenever feasible, at the discretion of the city.

REQUEST FOR QUALIFICATIONS (RFQ) A solicitation method used for requesting statements of qualifications in order to determine the most qualified proposer for professional services.

BID – a price and terms quote received in response to an ITB.

PROPOSAL – a proposal received in response to an RFP.

BIDDER – Person or firm submitting a Bid.

PROPOSER – Person or firm submitting a Proposal.

RESPONSIVE BIDDER – A firm who has submitted a bid, offer, quote, or response which conforms in all material respects to the competitive solicitation document and all of its requirements.

RESPONSIBLE BIDDER – A firm who is fully capable of meeting all requirements of the solicitation and subsequent contract. The respondent must possess the full capability, including financial and technical, ability, business judgment, experience, qualifications, facilities, equipment, integrity, capability, and reliability, in all respects to perform fully the contract requirements and assure good faith performance as determined by the city.

FIRST RANKED PROPOSER – That Proposer, responding to a City RFP, whose Proposal is deemed by the City, the most advantageous to the City after applying the evaluation criteria contained in the RFP.

SELLER – Successful Bidder or Proposer who is awarded a Purchase Order or Contract to provide goods or services to the City.

CONTRACTOR – Any firm having a contract with the city. Also referred to as a "Vendor".

CONTRACT – All types of agreements, including purchase orders, for procurement of supplies, services, and construction, regardless of what these agreements may be called.

CONSULTANT – A firm providing professional services for the city.

- 2.02 SPECIAL CONDITIONS:** Any and all Special Conditions contained in this ITB that may be in variance or conflict with these General Conditions shall have precedence over these General Conditions. If no changes or deletions to General Conditions are made in the Special Conditions, then the General Conditions shall prevail in their entirety,

PART III BIDDING AND AWARD PROCEDURES:

- 3.01 SUBMISSION AND RECEIPT OF BIDS:** To receive consideration, bids must be received prior to the bid opening date and time. Unless otherwise specified, Bidders should use the proposal forms provided by the City. These forms may be duplicated, but failure to use the forms may cause the bid to be rejected. Any erasures or corrections on the bid must be made in ink and initialed by Bidder in ink. All information submitted by the Bidder shall be printed, typewritten or filled in with pen and ink. Bids shall be signed in ink. Separate bids must be submitted for each ITB issued by the City in separate sealed envelopes properly marked. When a particular ITB or RFP requires multiple copies of bids or proposals they may be included in a single envelope or package properly sealed and identified. Only send bids via facsimile transmission (FAX) if the ITB specifically states that bids sent via FAX will be considered. If such a statement is not included in the ITB, bids sent via FAX will be rejected. Bids will be publicly opened in the Procurement Office, or other designated area, in the presence of Bidders, the public, and City staff. Bidders and the public are invited and encouraged to attend bid openings. Bids will be tabulated and made available for review by Bidder's and the public in accordance with applicable regulations.
- 3.02 MODEL NUMBER CORRECTIONS:** If the model number for the make specified in this ITB is incorrect, or no longer available and replaced with an updated model with new specifications, the Bidder shall enter the correct model number on the bidder proposal page. In the case of an updated model with new specifications, Bidder shall provide adequate information to allow the City to determine if the model bid meets the City's requirements.
- 3.03 PRICES QUOTED:** Deduct trade discounts, and quote firm net prices. Give both unit price and extended total. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.
- 3.04 TAXES:** The City of Fort Lauderdale is exempt from Federal Excise and Florida Sales taxes on direct purchase of tangible property. Exemption **number for EIN is 59-6000319, and State Sales tax exemption number is 85-8013875578C-1.**
- 3.05 WARRANTIES OF USAGE:** Any quantities listed in this ITB as estimated or projected are provided for tabulation and information purposes only. No warranty or guarantee of quantities is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.
- 3.06 APPROVED EQUAL:** When the technical specifications call for a brand name, manufacturer, make, model, or vendor catalog number with acceptance of APPROVED EQUAL, it shall be for the purpose of establishing a level of quality and features desired and acceptable to the City. In such cases, the City will be receptive to any unit that would be considered by qualified City personnel as an approved equal. In that the specified make and model represent a level of quality and features desired by the City, the Bidder must state clearly in the bid any variance from those specifications. It is the Bidder's responsibility to provide adequate information, in the bid, to enable the City to ensure that the bid meets the required criteria. If adequate information is not submitted with the bid, it may be rejected. The City will be the sole judge in determining if the item bid qualifies as an approved equal.
- 3.07 MINIMUM AND MANDATORY TECHNICAL SPECIFICATIONS:** The technical specifications may include items that are considered minimum, mandatory, or required. If any Bidder is unable to meet or exceed these items, and feels that the technical specifications are overly restrictive, the bidder must notify the Procurement Services Division immediately. Such notification must be received by the Procurement Services Division prior to the deadline contained in the ITB, for questions of a material nature, or prior to five (5) days before bid due and open date, whichever occurs first. If no such notification is received prior to that deadline, the City will consider the technical specifications to be acceptable to all bidders.
- 3.08 MISTAKES:** Bidders are cautioned to examine all terms, conditions, specifications, drawings, exhibits, addenda, delivery instructions and special conditions pertaining to the ITB. Failure of the Bidder to examine all pertinent documents shall not entitle the bidder to any relief from the conditions imposed in the contract.
- 3.09 SAMPLES AND DEMONSTRATIONS:** Samples or inspection of product may be requested to determine suitability. Unless otherwise specified in Special Conditions, samples shall be requested after the date of bid opening, and if requested should be received by the City within seven (7) working days of request. Samples, when requested, must be furnished free of expense to the City and if not used in testing or destroyed, will upon request of the Bidder, be returned within thirty (30) days of bid award at Bidder's expense. When required, the City may request full demonstrations of units prior to award. When such demonstrations are requested, the Bidder shall respond promptly and arrange a demonstration at a convenient location. Failure to provide samples or demonstrations as specified by the City may result in rejection of a bid.
- 3.10 LIFE CYCLE COSTING:** If so specified in the ITB, the City may elect to evaluate equipment proposed on the basis of total cost of ownership. In using Life Cycle Costing, factors such as the following may be considered: estimated useful life, maintenance costs, cost of supplies, labor intensity, energy usage, environmental impact, and residual value. The City reserves the right to use those or other applicable criteria, in its sole opinion that will most accurately estimate total cost of use and ownership.
- 3.11 BIDDING ITEMS WITH RECYCLED CONTENT:** In addressing environmental concerns, the City of Fort Lauderdale encourages Bidders to submit bids or alternate bids containing items with recycled content. When submitting bids containing items with recycled content, Bidder shall provide documentation adequate for the City to verify the recycled content. The City prefers packaging consisting of materials that are degradable or able to be recycled. When specifically stated in the ITB, the City may give preference to bids containing items manufactured with recycled material or packaging that is able to be recycled.

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- 3.12 USE OF OTHER GOVERNMENTAL CONTRACTS:** The City reserves the right to reject any part or all of any bids received and utilize other available governmental contracts, if such action is in its best interest.
- 3.13 QUALIFICATIONS/INSPECTION:** Bids will only be considered from firms normally engaged in providing the types of commodities/services specified herein. The City reserves the right to inspect the Bidder's facilities, equipment, personnel, and organization at any time, or to take any other action necessary to determine Bidder's ability to perform. The Procurement Director reserves the right to reject bids where evidence or evaluation is determined to indicate inability to perform.
- 3.14 BID SURETY:** If Special Conditions require a bid security, it shall be submitted in the amount stated. A bid security can be in the form of a bid bond or cashier's check. Bid security will be returned to the unsuccessful bidders as soon as practicable after opening of bids. Bid security will be returned to the successful bidder after acceptance of the performance bond, if required; acceptance of insurance coverage, if required; and full execution of contract documents, if required; or conditions as stated in Special Conditions.
- 3.15 PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT:** The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The city's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. In addition, the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Proposals bearing copyright symbols or otherwise purporting to be subject to copyright protection in full or in part may be rejected. The proposer authorizes the City to publish, copy, and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE RFP AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE RFP OR ANY PART THEREOF AS COPYRIGHTED.

- 3.16 PROHIBITION OF INTEREST:** No contract will be awarded to a bidding firm who has City elected officials, officers or employees affiliated with it, unless the bidding firm has fully complied with current Florida State Statutes and City Ordinances relating to this issue. Bidders must disclose any such affiliation. Failure to disclose any such affiliation will result in disqualification of the Bidder and removal of the Bidder from the City's bidder lists and prohibition from engaging in any business with the City.
- 3.17 RESERVATIONS FOR AWARD AND REJECTION OF BIDS:** The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.
- If the ITB provides for a contract trial period, the City reserves the right, in the event the selected bidder does not perform satisfactorily, to award a trial period to the next ranked bidder or to award a contract to the next ranked bidder, if that bidder has successfully provided services to the City in the past. This procedure to continue until a bidder is selected or the contract is re-bid, at the sole option of the City.
- 3.18 LEGAL REQUIREMENTS:** Applicable provisions of all federal, state, county laws, and local ordinances, rules and regulations, shall govern development, submittal and evaluation of all bids received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the City by and through its officers, employees and authorized representatives, or any other person, natural or otherwise; and lack of knowledge by any bidder shall not constitute a cognizable defense against the legal effect thereof.
- 3.19 BID PROTEST PROCEDURE:** Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the city to follow the city's procurement ordinance or any applicable law may protest to the chief procurement officer, by delivering a letter of protest to the director of finance within five (5) days after a notice of intent to award is posted on the city's web site at the following url: <https://www.fortlauderdale.gov/departments/finance/procurement-services/notices-of-intent-to-award>

The complete protest ordinance may be found on the city's web site at the following url: https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeid=coor_ch2ad_artvfi_div2pr_s2-182direpr

PART IV BONDS AND INSURANCE

- 4.01 PERFORMANCE BOND:** If a performance bond is required in Special Conditions, the Contractor shall within fifteen (15) working days after notification of award, furnish to the City a Performance Bond, payable to the City of Fort Lauderdale, Florida, in the face amount specified in Special Conditions as surety for faithful

performance under the terms and conditions of the contract. If the bond is on an annual coverage basis, renewal for each succeeding year shall be submitted to the City thirty (30) days prior to the termination date of the existing Performance Bond. The Performance Bond must be executed by a surety company of recognized standing, authorized to do business in the State of Florida and having a resident agent.

Acknowledgement and agreement is given by both parties that the amount herein set for the Performance Bond is not intended to be nor shall be deemed to be in the nature of liquidated damages nor is it intended to limit the liability of the Contractor to the City in the event of a material breach of this Agreement by the Contractor.

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4.02 INSURANCE: The Contractor shall assume full responsibility and expense to obtain all necessary insurance as required by City or specified in Special Conditions.

The Contractor shall provide to the Procurement Services Division original certificates of coverage and receive notification of approval of those certificates by the City's Risk Manager prior to engaging in any activities under this contract. The Contractor's insurance is subject to the approval of the City's Risk Manager. The certificates must list the City as an ADDITIONAL INSURED for General Liability Insurance and shall have no less than thirty (30) days written notice of cancellation or material change. Further modification of the insurance requirements may be made at the sole discretion of the City's Risk Manager if circumstances change or adequate protection of the City is not presented. Bidder, by submitting the bid, agrees to abide by such modifications.

PART V PURCHASE ORDER AND CONTRACT TERMS:

5.01 COMPLIANCE WITH SPECIFICATIONS, LATE DELIVERIES/PENALTIES: Items offered may be tested for compliance with bid specifications. Items delivered which do not conform to bid specifications may be rejected and returned at Contractor's expense. Any violation resulting in contract termination for cause or delivery of items not conforming to specifications, or late delivery may also result in:

- Bidder's name being removed from the City's bidder's mailing list for a specified period and Bidder will not be recommended for any award during that period.
- All City Departments being advised to refrain from doing business with the Bidder.
- All other remedies in law or equity.

5.02 ACCEPTANCE, CONDITION, AND PACKAGING: The material delivered in response to ITB award shall remain the property of the Seller until a physical inspection is made and the material accepted to the satisfaction of the City. The material must comply fully with the terms of the ITB, be of the required quality, new, and the latest model. All containers shall be suitable for storage and shipment by common carrier, and all prices shall include standard commercial packaging. The City will not accept substitutes of any kind. Any substitutes or material not meeting specifications will be returned at the Bidder's expense. Payment will be made only after City receipt and acceptance of materials or services.

5.03 SAFETY STANDARDS: All manufactured items and fabricated assemblies shall comply with applicable requirements of the Occupation Safety and Health Act of 1970 as amended.

5.04 ASBESTOS STATEMENT: All material supplied must be 100% asbestos free. Bidder, by virtue of bidding, certifies that if awarded any portion of the ITB the bidder will supply only material or equipment that is 100% asbestos free.

5.05 OTHER GOVERNMENTAL ENTITIES: If the Bidder is awarded a contract as a result of this ITB, the bidder may, if the bidder has sufficient capacity or quantities available, provide to other governmental agencies, so requesting, the products or services awarded in accordance with the terms and conditions of the ITB and resulting contract. Prices shall be F.O.B. delivered to the requesting agency.

5.06 VERBAL INSTRUCTIONS PROCEDURE: No negotiations, decisions, or actions shall be initiated or executed by the Contractor as a result of any discussions with any City employee. Only those communications which are in writing from an authorized City representative may be considered. Only written communications from Contractors, which are assigned by a person designated as authorized to bind the Contractor, will be recognized by the City as duly authorized expressions on behalf of Contractors.

5.07 INDEPENDENT CONTRACTOR: The Contractor is an independent contractor under this Agreement. Personal services provided by the Proposer shall be by employees of the Contractor and subject to supervision by the Contractor, and not as officers, employees, or agents of the City. Personnel policies, tax responsibilities, social security, health insurance, employee benefits, procurement policies unless otherwise stated in this ITB, and other similar administrative procedures applicable to services rendered under this contract shall be those of the Contractor.

5.08 INDEMNITY/HOLD HARMLESS AGREEMENT: Contractor shall protect and defend at Contractor's expense, counsel being subject to the City's approval, and indemnify and hold harmless the City and the City's officers, employees, volunteers, and agents from and against any and all losses, penalties, fines, damages, settlements, judgments, claims, costs, charges, expenses, or liabilities, including any award of attorney fees and any award of costs, in connection with or arising directly or indirectly out of any act or omission by the Contractor or by any officer, employee, agent, invitee, subcontractor, or sublicensee of the Contractor. Without limiting the foregoing, any and all such claims, suits, or other actions relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged violations of any applicable statute, ordinance, administrative order, rule or regulation, or decree of any court shall be included in the indemnity hereunder.

5.09 TERMINATION FOR CAUSE: If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor shall violate any of the provisions of this Agreement, the City may upon written notice to the Contractor terminate the right of the Contractor to proceed under this Agreement, or with such part or parts of the Agreement as to which there has been default, and may hold the Contractor liable for any damages caused to the City by reason of such default and termination. In the event of such termination, any completed services performed by the Contractor under this Agreement shall, at the option of the City, become the City's property and the Contractor shall be entitled to receive equitable compensation for any work completed to the satisfaction of

the City. The Contractor, however, shall not be relieved of liability to the City for damages sustained by the City by reason of any breach of the Agreement by the Contractor, and the City may withhold any payments to the Contractor for the purpose of setoff until such time as the amount of damages due to the City from the Contractor can be determined.

- 5.10 TERMINATION FOR CONVENIENCE:** The City reserves the right, in the City's best interest as determined by the City, to cancel any contract by giving written notice to the Contractor thirty (30) days prior to the effective date of such cancellation.
- 5.11 CANCELLATION FOR UNAPPROPRIATED FUNDS:** The obligation of the City for payment to a Contractor is limited to the availability of funds appropriated in a current fiscal period, and continuation of the contract into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.
- 5.12 RECORDS/AUDIT:** The Contractor shall maintain during the term of the contract all books of account, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The Contractor agrees to make available to the City Auditor or the City Auditor's designee, during normal business hours and in Broward, Miami-Dade or Palm Beach Counties, all books of account, reports, and records relating to this contract. The Contractor shall retain all books of account, reports, and records relating to this contract for the duration of the contract and for three years after the final payment under this Agreement, until all pending audits, investigations or litigation matters relating to the contract are closed, or until expiration of the records retention period prescribed by Florida law or the records retention schedules adopted by the Division of Library and Information Services of the Florida Department of State, whichever is later.
- 5.13 PERMITS, TAXES, LICENSES:** The successful Contractor shall, at his/her/its own expense, obtain all necessary permits, pay all licenses, fees and taxes, required to comply with all local ordinances, state and federal laws, rules and regulations applicable to business to be carried out under this contract.
- 5.14 LAWS/ORDINANCES:** The Contractor shall observe and comply with all Federal, state, local and municipal laws, ordinances rules and regulations that would apply to this contract.

NON-DISCRIMINATION: The Contractor shall not, in any of its activities, including employment, discriminate against any individual on the basis of race, color, national origin, age, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, marital status, or any other protected classification as defined by applicable law.

1. The Contractor certifies and represents that the Contractor will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, (2019), as may be amended or revised, ("Section 2-187"), during the entire term of this Agreement.
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

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- 5.15 UNUSUAL CIRCUMSTANCES:** If during a contract term where costs to the City are to remain firm or adjustments are restricted by a percentage or CPI cap, unusual circumstances that could not have been foreseen by either party of the contract occur, and those circumstances significantly affect the Contractor's cost in providing the required prior items or services, then the Contractor may request adjustments to the costs to the City to reflect the changed circumstances. The circumstances must be beyond the control of the Contractor, and the requested adjustments must be fully documented. The City may, after examination, refuse to accept the adjusted costs if they are not properly documented, increases are considered to be excessive, or decreases are considered to be insufficient. In the event the City does not wish to accept the adjusted costs and the matter cannot be resolved to the satisfaction of the City, the City will reserve the following options:
1. The contract can be canceled by the City upon giving thirty (30) days written notice to the Contractor with no penalty to the City or Contractor. The Contractor shall fill all City requirements submitted to the Contractor until the termination date contained in the notice.
 2. The City requires the Contractor to continue to provide the items and services at the firm fixed (non-adjusted) cost until the termination of the contract term then in effect.
 3. If the City, in its interest and in its sole opinion, determines that the Contractor in a capricious manner attempted to use this section of the contract to relieve Contractor of a legitimate obligation under the contract, and no unusual circumstances had occurred, the City reserves the right to take any and all action under law or equity. Such action shall include, but not be limited to, declaring the Contractor in default and disqualifying Contractor from receiving any business from the City for a stated period of time.

If the City does agree to adjusted costs, these adjusted costs shall not be invoiced to the City until the Contractor receives notice in writing signed by a person authorized to bind the City in such matters.

- 5.16 ELIGIBILITY:** If applicable, the Contractor must first register with the Florida Department of State in accordance with Florida Statutes, prior to entering into a contract with the City.
- 5.17 PATENTS AND ROYALTIES:** The Contractor, without exception, shall defend, indemnify, and hold harmless the City and the City's employees, officers, employees, volunteers, and agents from and against liability of any nature and kind, including cost and expenses for or on account of any copyrighted, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, including their use by the City. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include any and all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.

- 5.18 **ASSIGNMENT:** Contractor shall not transfer or assign the performance required by this ITB without the prior written consent of the City. Any award issued pursuant to this ITB, and the monies, which may become due hereunder, are not assignable except with the prior written approval of the City Commission or the City Manager or City Manager's designee, depending on original award approval.
- 5.19 **GOVERNING LAW; VENUE:** The Contract shall be governed by and construed in accordance with the laws of the State of Florida. Venue for any lawsuit by either party against the other party or otherwise arising out of the Contract, and for any other legal proceeding, shall be in the courts in and for Broward County, Florida, or in the event of federal jurisdiction, in the Southern District of Florida.
- 5.20 **PUBLIC RECORDS:**

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301.

Contractor shall comply with public records laws, and Contractor shall:

1. Keep and maintain public records required by the City to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2019), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

BID/PROPOSAL CERTIFICATION

Please Note: It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through www.BidSync.com prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration) **Craven, Thompson & Associates, Inc.** EIN (Optional): **59-0948029**

Address: **3563 NW 53rd Street**

City: **Fort Lauderdale** State: **FL** Zip: **33309**

Telephone No.: **954-739-6400** FAX No.: **954-739-6409** Email: **pgibney@craventhompson.com**

Delivery: Calendar days after receipt of Purchase Order (section 1.02 of General Conditions): **To Be Determined**

Total Bid Discount (section 1.05 of General Conditions): **N/A**

Check box if your firm qualifies for MBE / SBE / WBE (section 1.09 of General Conditions): ☐

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>
1	5/23/2022				
2	6/16/2022				

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. **You must also click the "Take Exception" button.**

None.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal.

I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Patrick J. Gibney, P.E.
Name (printed)

6/27/2022
Date

Patrick J. Gibney, P.E.
Signature

Vice President, Engineering
Title

Revised 4/28/2020

NON-COLLUSION STATEMENT:

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME**RELATIONSHIPS**

None

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

Patrick J. Gibney, P.E.
Authorized Signature

Vice President, Engineering
Title

Patrick J. Gibney, P.E.
Name (Printed)

6/27/2022
Date

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

Patrick J. Gibney, P.E.
Authorized Signature

Patrick J. Gibney, P.E., Vice President, Engineering
Print Name and Title

6/27/2022
Date

LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

Section 2-186, Code of Ordinances of the City of Fort Lauderdale, (Ordinance No. C-17-26), provides for a local business preference.

In order to be considered for a local business preference, a bidder must include the Local Business Preference Certification Statement of this bid/proposal, as applicable to the local business preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a Local Business Preference, the Bidder shall, within ten (10) calendar days, submit the following documentation for the Local Business Preference Class claimed:

- a) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **and**
- b) List of the names of all employees of the bidder and evidence of employees' residences within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the local business preference.

THE COMPLETE LOCAL BUSINESS PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:

https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR&showChanges=true

Definitions: The term "Business" shall mean a person, firm, corporation or other business entity which is duly licensed and authorized to engage in a particular work in the State of Florida. Business shall be broken down into four (4) types of classes:

1. Class A Business – shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City, **and** shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
2. Class B Business - shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, **or** shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
3. Class C Business - shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of Broward County.
4. Class D Business – shall mean any Business that does not qualify as either a Class A, Class B, or Class C business.

LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this bid/proposal. Violation of the foregoing provision may result in contract termination.

- | | | |
|-----|---|--|
| (1) | (Business Name) | is a Class A Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt <u>and</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City. |
| (2) | Craven, Thompson & Associates, Inc.
(Business Name) | is a Class B Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Business Tax Receipt <u>or</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City. |
| (3) | (Business Name) | is a Class C Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Broward County Business Tax Receipt shall be provided within ten (10) calendar days of a formal request by the City. |
| (4) | (Business Name) | is a Class D Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186, and does not qualify for Local Preference consideration. |
| (5) | (Business Name) | requests a Conditional Class A classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |
| (6) | (Business Name) | requests a Conditional Class B classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |

BIDDER'S COMPANY: **Craven, Thompson & Associates, Inc.**

AUTHORIZED PERSON:	COMPANY	Patrick J. Gibney, P.E.	Patrick J. Gibney, P.E.	6/27/2022
		PRINT NAME	SIGNATURE	DATE

Forms Non-ISO – Revised 7/2/2021



DISADVANTAGED BUSINESS ENTERPRISE (DBE) PREFERENCE

Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business enterprise preference.

In order to be considered for a DBE Preference, a bidder must include a certification from a government agency, as applicable to the DBE Preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a DBE Preference the Bidder shall, within **ten (10)** calendar days, submit the following documentation to the DBE Class claimed:

- a) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **or** State of Florida active registration **and/or**
- b) List of the names of all employees of the bidder and evidence of employees' residences within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the disadvantaged business enterprise preference.

THE COMPLETE DBE PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK: https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-185EQOPDIBUEN&showChanges=true

Definitions

- a. The term "disadvantaged class 1 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- b. The term "disadvantaged class 2 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the City with full-time employees and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- c. The term "disadvantaged class 3 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

- d. The term “disadvantaged class 4 enterprise” shall mean any disadvantaged business enterprise that does not qualify as a Class 1, Class 2, or Class 3 business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City’s Procurement Manual.

DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the disadvantaged business enterprise preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than **thirty (30)** calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

- | | | |
|-----|-------------------------------|--|
| (1) | N/A
(Business Name) | is a disadvantaged Class 1 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (2) | N/A
(Business Name) | is a disadvantaged Class 2 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the City with full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (3) | N/A
(Business Name) | is a disadvantaged Class 3 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (4) | N/A
(Business Name) | is a disadvantaged Class 4 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class 1, Class 2, or Class 3 business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual. |
| (5) | N/A
(Business Name) | requests a Conditional Class 1 classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |
| (6) | N/A
(Business Name) | requests a Conditional Class 2 classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City. |

BIDDER'S COMPANY: **Craven, Thompson & Associates, Inc.**

AUTHORIZED PERSON:	COMPANY	Patrick J. Gibney, P.E.	Patrick J. Gibney, P.E.	6/27/2022
		PRINT NAME	SIGNATURE	DATE

Forms Non-Iso – revised 7/2/2021

E-VERIFY AFFIRMATION STATEMENT

RFP/Bid /Contract No: **RFQ # 12665-1026**

Project Description: **Water Consent Order Program Management and Mapping Services**

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

- (a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- (b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: **Craven, Thompson & Associates, Inc.**

Authorized Company Person's Signature: **Patrick J. Gibney, P.E.**

Authorized Company Person's Title: **Vice President, Engineering**

Date: **6/27/2022**

9/15/2020

REFERENCES

A minimum of three (3) references shall be provided:

1. Company Name: NMB Water / Jacobs

Address: **17050 NE 19th Avenue**

North Miami Beach, Florida 33162

Contact: **Mr. Karim L. Rossy, Development Engineer 3**

Phone #: **(305) 948-2980** Email: **karim.rossy@jacobs.com**

Contract Value: **\$1,065,580.00** Year: **2016**

Description: **North Miami Beach Water & Sewer G.I.S. - The purpose of the 25,600-Acre Service Area Project was to provide the city with the complete GIS product of their water and sanitary system. This involved the conversion of the City's existing water and sanitary sewer infrastructure, from an AutoCAD drawing file format to the industry standard, Environmental Systems Research Institute (ESRI) Geographic Information System (GIS) format. The Project included the entire North Miami Beach Utility service area. The process included conversion of existing AutoCAD files, into the same coordinate system as the GIS, so that future updates will be more easily transferred between the two systems, for updates and maintenance. The project involved setting up a GIS Network file structure for the city to insert existing and future documentation into, as well as, adding GIS database information in the future.**

2. Company Name: City of North Miami Beach

Address: **Public Works Department**

17050 NE 19th Avenue

North Miami Beach, Florida 33162

Contact: **Mr. D. Chidi Tobias, Civil Engineer**

Phone #: **(305) 947-7581, ext. 2313** Email: **Chidi.Tobias@citynmb.com**

Contract Value: **\$200,000.00** Year: **2018**

Description: **Stormwater G.I.S./Surveying Data Collection Project - The City of North Miami Beach is divided into six (6) zones and that structure/pipe data was collected within each zone and identified by zone and structure numbers. GIS data was collected and processed utilizing the City's existing Unit ID naming system in the geodatabase. The data was collected by a Unique ID. Craven Thompson provided the city with a copy of the updated geodatabase with all the data fields that were collected. The GIS data collected consists of:**

Structure type (junction, inlet, control structure, drainage well):

Structure type (junction, inlet, control structure, drainage well):

- Invert elevation(s) and direction, Bottom of structure, Pollution retardant baffles (PRBs) present, (if present) weir elevation and geometry, (if present) bleeder elevation and geometry,

Condition (pictures for documentation)**Pipes:**

- Diameter (inches) Material (RCP, CMP, HDPE, Other), Condition (pictures for documentation)

Culvert and Outfalls:

- Upstream/Downstream Invert elevations, Material (CMP, RCP), Type (Circular, Elliptical, H. Ellipse, Rectangular), Diameter (inches), Single barrel vs. multiple, Condition (pictures for documentation)

Headwalls and Seawalls:

- Headwall treatment (Square Edge, Projecting Outlet, Mitered Slope)
- Headwall Material (Concrete, Rip Rap)
- Seawall Construction Material (boulder and rock, sheet pipes, cast concrete, rip rap)
- Top of seawall elevation
- Condition (pictures for documentation)

3. Company Name: Seminole Tribe of Florida

Address: **5700 Griffin Road, Suite 200**

Davie, Florida 33314

Contact: **Mr. Ranthus Fouch, P.E., Senior Civil Engineer**

Phone #: **(954) 203-1034** Email: **ranthusfouch@semtribe.com**

Contract Value: **\$143,720.00** Year: **2021**

Description: **Hollywood Seminole Reservation Stormwater Data Collection/GIS**

The Hollywood Seminole Reservation is generally bounded by Stirling Road on the north and by Sheridan Street on the south and includes the Hard Rock Hotel and Casino which is located north of Stirling Road. The east and west boundaries are formed by existing residential neighborhoods in the City of Hollywood. Craven Thompson updated the Tribes stormwater GIS information through entering as-built data, and surveying the hundreds of stormwater/drainage structures located on the reservation.

Craven Thompson acquired accurate horizontal and vertical information on every stormwater/drainage feature on the Tribes Hollywood Reservation. We reviewed existing storm sewer surveys and as-builts that could assist with GIS location and with this information our survey crew measured each structure to get accurate horizontal and vertical information for the Tribes GIS system. During the data collection phase, the GPS locations of structures, canals, retention areas and ditches were captured with X-Y-Z coordinate values in the data collector. In addition, details such as pipe sizes, material, inverts, weirs, age, and structure condition were obtained in the field.

We modified the Tribes GIS database to include new relevant information and to include all information from the data collection efforts and condition assessment.

4. Company Name: Baltimore City Department of Public Works

Address: Horizontal Utility Project Delivery Section (Water)

200 Holiday Street, Suite 305

Baltimore, Maryland 21202

Contact: Mr. Hernan Guadalupe, DBA, MEng, PMP, PSP, Engineer II

Phone #: (410) 396-8189 Email: Hernan.Guadalupe@baltimorecity.gov

Contract Value: \$415 Million Year: 2015 to 2018

Description: Client Reference for Hazen and Sawyer (Program Management)

Program management services for the DPW Water Utilities section, including planning, design management and construction management in support of the City's goal of 15 miles of water main replacement every fiscal year.

5. Company Name: Jefferson County Commission

Address: Environmental Services Department

716 Richard Arrington Jr. Boulevard North, Suite A300

Birmingham, Alabama 35203

Contact: Mr. Daniel White, Deputy Director

Phone #: (205) 214-8610 Email: whited@jaccal.org

Contract Value: \$176,195,914.00 Year: 2014 - 2035

Description: Client Reference for Hazen and Sawyer (Program Manager - CIP Planning). Asset Management Program for the Collection System with primary goal to reduce/eliminate SSOs from a 2-year storm event.